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GRADUATE EDUCATION IN THE CLINICAL BRANCHES, AND THE MINNESOTA EXPERIMENT *

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On the 24th of May just past, in the faculty room of the Medical School of the University of Minnesota, Rood Taylor was examined for the degree of Doctor of Science in Pediatrics. About ten persons were present. These included the associate professor of pediatrics, presiding in the absence of the chief of the department; two professors of anatomy, one of whom has specialized in the anatomy of the infant; one professor of physiology; two of medicine, and an associate professor of chemistry.

For more than two hours a lively game went on across the invisible net separating faculty and student. One after another the professors served swift questions; and the answers came back, usually, fair in the court—sometimes (be it whispered), lobbed quite over the heads of the faculty players! Occasionally, however, the young player's racquet seemed full of holes, and the questions went past him into indefinite vacancy.

First he was asked about his thesis, which happened to be on "Hunger in Infants," an extension of the work done here at Rush by Carlson and Ginsberg. Then followed inquiries of more general scope, on the diseases of children, on anatomy, on physiology, on medicine. Finally the professor of chemistry, field of the candidate's minor, contributed interrogatories concerning hydrogen-ion concentration.

At last the game was declared a "love set"; the candidate, who had really done very creditably, was voted "passed"; and all went home without thinking that they had taken part in an occasion that may come to be considered one of the historic marks in the advance of medical education; for the examination of Dr. Taylor was the first ever given for an earned doctor's degree in a clinical subject.

To some phases of the experiment leading up to the granting of this degree I invite your attention.

As I see it, the fundamental elements of the situation are expressed in six almost self-evident propositions:

PROPOSITION 1.—The important facts of medical science have become too many for one man to know, and the necessary technical processes have become too complex and numerous for one man to master. Division of labor or specialism is advantageous and unavoidable. This is true alike for better practice and for surer progress.

PROPOSITION 2.—Systematic graduate training in the clinical specialties, including advanced work in the underlying sciences, is a necessity. This means cooperative and coordinated educational processes.

It is true that the first specialists had to make both themselves and their specialty. It is true that many excellent men in every profession have been self trained. Nevertheless, both economy of effort and the legitimate interest of the public demand that the education of specialists be systematized and standardized.

PROPOSITION 3.—The safeguarding of the public demands some method of certification for specialists. This is, perhaps, quite as important as the primary certification or licensure. How is the average citizen at the present time to proceed in order intelligently to select a competent surgeon? The answer is, "It can't be done." Perhaps as good a way as any is that of the Minneapolis lady who went into a big office building, stood in front of the directory of physicians, closed her eyes, said a little prayer, put out her hand, and had her appendix removed by the physician whose name her fingers thus blindly hit on. If she found a competent man, it was a miracle, or else a lucky chance; for in that directory the names of the experienced and the inexperienced, the highly trained and the self-announced, stand forth in type of equal size.

PROPOSITION 4.—The progress of medical science is of the utmost importance alike to individual human need, to civilization as a progressive ideal, and to the profession of medicine as a satisfying life work for men of the best intelligence.

PROPOSITION 5.—The leaders of medicine as exemplified by the class of specialists should be more than practitioners. They should be scientists.

Real success in practice demands scientific method and the scientific spirit. Leadership in the profession should rest on productive scholarship. The education of specialists should be planned with that end in view.

PROPOSITION 6.—The progress of medical science demands more and more rigid scientific preparation on the part of all physicians, but particularly on the part of investigators. Some one has said that the future great discoveries of physics will be made in the sixth decimal place. In a similar way, it seems to me, refinements of quantitative methods and a more comprehensive, intelligent and exact use of statistics are likely to add most of the great new truths of medical science. Nothing is fully known until it can be expressed mathematically. All this implies more rigid training for the medical investigator of the future.

Every one of my six propositions involves a task appropriate to a university. The practical questions arise as to the extent to which a given university may undertake these tasks for the medical specialties, and how to go about what is undertaken. At the Univer-

* Read at the Commencement Exercises of Rush Medical College, June 13, 1917.

sity of Minnesota we are feeling our way in both these particulars, and some account of our experience will be more valuable than further theoretical disquisition.

First, however, let me say that for years every good medical school in the country has been doing graduate work in the clinical branches and is doing it now. It is unsystematized and for the most part unrecognized; but nevertheless in the clinics and laboratories there are always young graduates, as voluntary assistants, whose chief purpose is to learn. Many of the best men on the faculty of Rush Medical College were undoubtedly thus trained. They were not formally instructed; there were no requiremnts of entrance, attendance or examination. No degrees marked the completion of their postgraduate education. Nevertheless the men worked in a university atmosphere. The equipment and libraries were at their disposal. The critical guidance of the master was unconsciously exerted. These are not self-trained men in the sense that I have previously used that term. They are university products. What we have attempted to do at Minnesota is to systematize what was already going on in our university (as in others), and give it consciousness and individuality.

As soon as one attempts to systematize, one discovers lack of symmetry. As soon as one attains consciousness, new phases of endeavor open to view. Both these experiences have been ours at the University of Minnesota. From a vague feeling of the need of systematic education in the medical specialties, we have come to realize the need of training for medical research, for medical teachers and for the higher walks of practice. At the present time one may perhaps regard our effort as an officers' training school preparatory to the larger work that must attend the drilling of the entire army of specialism, a task gradually to be accomplished, I hope, through the united effort of the universities and clinics of the country.

THE ADVANCED DOCTOR'S DEGREE IN MEDICINE

As far back as 1910, our faculty, impressed with the need of graduate training for surgeons and of standardizing surgery as a special branch of medical science, decided to organize a two year course and offer a special degree. A course in ophthalmology was also proposed; but, owing to various causes, the matter was postponed. In the spring of 1914, however, the question was revived, and with it the perplexing question of assistance in our teaching clinics. It was argued that if the same hired assistants were used year after year, the graduate educational opportunities of our clinics would be largely lost; that it was better to have a change from time to time—better in the sense that more medical graduates would obtain added training while assisting. We decided, therefore, to combine a fruitful idea adopted from the University of Michigan, namely, the full-time small salaried clinical assistantship on limited time appointment, with our original plan of an advanced course leading to a graduate degree. We started with six teaching fellowships on a three year basis on progressive annual stipends of $500, $750, and $1,000, and arranged that the successful completion of requirements to be formulated should lead to the degree of Doctor of Science in the specialty concerned; for example, D.Sc. in Surgery or D.Sc. in Ophthalmology.

These requirements have gradually been worked out in practice under the Graduate School Medical Committee, and are as follows:

1. Requirements for acceptance as a medical graduate student: (*a*) a bachelor's degree or equivalent (which may have been obtained in a combined B.S. and M.D. course); (*b*) an M.D. degree from a good school, and (*c*) a year's internship in an approved hospital.

2. Requirements for the advanced doctor's degree: (*a*) at least three years of graduate study distributed chiefly between a major subject and one or two supporting or minor subjects; (*b*) a reading knowledge of German and French tested by special examination; (*c*) an acceptable thesis, which must contain the results of original investigation, and (*d*) final written and oral examinations before committees of the graduate faculty.

It will be noted that the requirements for entrance to graduate work in the clinical branches of medicine are higher than those for graduate work in any other department in the whole university. This is due to the peculiar position of the clinical subjects with respect to dependence on a number of sciences and because a reasonable experience in practice, for example, an internship, is desirable before graduate study begins. Apart from this difference as to entrance, the requirements are substantially those required in the good universities for the degree of Doctor of Philosophy, or for that of Doctor of Science when the latter (as at Minnesota) is given as an earned degree.[1]

As to the division of the candidate's time, it appears that approximately one third to one half will be devoted to the major (exclusive of thesis), and will include the clinical and technical experience necessary to insure fair skill in the specialty chosen; from one fourth to one third will be spent in the fundamental laboratories, and from one fourth to one third on the thesis. This again is not unlike the distribution of time usually worked out by a Ph.D. candidate in any of the sciences.

As to the individual program, it was apparent from the start that no two men could be trained exactly alike. Graduate education can be done only to a limited extent in classes, and in the clinical branches apparently hardly at all. It consists essentially in placing the competent student in contact with the materials, apparatus and other facilities of learning and allowing him, under suggestive and critical guidance, to educate himself. Consequently, each student has an adviser; and with him and the dean of the graduate school, the student works out his general program for the three years' course and his specific work from semester to semester, which program must finally be approved by the graduate school medical committee.[2]

1. I cannot entirely agree with Dr. L. B. Wilson (Science, 1917, n. s., **46**, 127) that an advanced degree in medicine stands for more than an advanced degree in a fundamental science. It is true that the medical man has much knowledge that the other lacks. So also a Ph.D. in Chemistry has much knowledge a Ph.D. in History lacks. It is true that more time beyond the bachelor's degree will be required for the doctorate in a clinical branch than for a doctorate in pure science. But the Ph.D. or D.Sc. represents not time essentially, but rather attainment in science, and particularly in research. In this respect, the advanced degree in medicine will mean the same as that in any other branch of learning.

2. Following is the three year program of Dr. McWhorter, fellow in surgery: For the year 1913-1914 (including summer) and first semester, 1914-1915; mornings in the university hospital as assistant and in charge of clinic clerks (undergraduates); did minor operations. Afternoons divided beween anatomy, pathology and experimental surgery. Second semester, 1914-1915, summer and first semester 1915-1916; forenoons, largely independent work at the hospital; did 150 major operations (under supervision when necessary). Afternoons, two thirds on experimental work (completing thesis); one third teaching surgery on cadaver and on animals. Second semester, 1916-1917, at Rochester, working in the Mayo Clinic in cystoscopy and roentgenoscopy. Dr. McWhorter published, besides his thesis, an original paper in anatomy and one in experimental surgery.

In the fall of 1914, then, under general ideas, since that time worked out in detail as described, and with the nucleus of teaching fellows, to which a few other students were added, graduate work in the clinical branches began at the University of Minnesota.

INSTRUCTION AT THE MAYO CLINIC

While all this discussion and preparation through several years had been going on in the university, the Mayo Clinic at Rochester, unhampered by tradition, and on the other hand, in a measure, unguided by scholastic ideals, had gradually developed into an informal graduate school and research institute. The young physicians hired as assistants could not help but learn many things in handling the large and varied material of this clinic. This was the absorption process to which I have already referred as a form of graduate work always going on in medical school clinics.

The absorptive process acts best on the prepared pabulum of well established routine. It contributes well to the learning of technic and to the acquisition of practical experience, but not so well to the gaining of solid foundations in science or to the stirring up of research aspirations.

Gradually at the Mayo Clinic a more conscious effort was made to give instruction. Men were employed to carry on research, and their assistants were guided in investigation. The library was strengthened and the laboratories were thoroughly equipped. By 1914, as I have indicated, it would have been entirely appropriate to speak of the Mayo graduate medical school, although there was no formal organization of that name. No degrees were granted, nor was there any course of study or legal authority. The assistants were called fellows, but no condition of appointment except the possession of an M.D. degree was imposed. The fellows stayed in the clinic varying lengths of time, but usually three years. Many of the earlier ones were taken into the organization.

Meanwhile also the Mayo brothers had been accumulating a fund with which to endow the work of their institution. By the fall of 1914 this fund had reached a milion and a half. Moreover, it had become clear to the Mayos that the endowment would best fulfil their fundamental purpose if the income were perpetually devoted to medical education and research.

At this stage and proceeding on the initiative of the state university, the proposal was made that the clinic affiliate itself with the medical school for the cooperative conduct of graduate medical education according to the plans which the medical schol had formulated. For the carrying out of this proposal the educational and research work going on at Rochester was separated from the clinic and incorporated under the name of the Mayo Foundation for Medical Education and Research. All exclusively scientific workers became employees of the foundation. Others were exclusively clinic employees or were employed part time in each institution, according to the distribution of their work between research and the money-making medical practice of the clinic.

This arrangement was made and the foundation was created, in order that association between the university and a private business might be avoided. Those in charge of the negotiations on both sides believed, at the time, that such a connection would be "wrong in principle," since one of the parties to the proposed arrangement was a state university. The plan, therefore, was to affiliate the foundation and not the clinic with the university. We believed that this was legally and educationally feasible. The preliminary documents were drawn up from this point of view.

However, as many know, the proposed affiliation did not escape criticism. On the contrary, an organized effort was set on foot to defeat it. In two successive legislatures strong efforts have been made first to prevent and latterly to annul the affiliation. The university has won both struggles, and public opinion is certainly in favor of a continuance of the cooperative experiment entered into by the University of Minnesota and the Mayo Foundation, for the trial period of six years agreed on in 1915.

I mention this controversy, not simply as an item of historical interest, but because out of it has come a change of ideas, in my own mind, at least, concerning the fundamental relations involved. I have frankly come to believe that our municipal and state educational systems do wrong to stand aloof from practical business. The purpose of our schools is to prepare men broadly for life. Surely practical training, say of a physician, is part of such preparation or education. To confine such practical training to practice on paupers in public institutions limits opportunities, is undemocratic, and savors of phariseeism. The ideals of education must not be considered something holy and apart; something enshrined and cloistered; something robed in white and to be kept unsullied from the world. No, the ideals of education are to be taken into every-day life and used to lift it up.

I think the Cincinnati plan of engineering education should be carried down into the high schools and should embrace all sorts of trades and professions. It would tend to democratize secondary education and to give it seriousness and purpose. It would prevent the abrupt cutoff between those who go into the trades and those who go into the colleges and learned professions. I believe, to be more specific on the question of medical education, that eventually every ethical private clinic in the country—every clinic large enough to afford advanced training for even one young medical graduate—should be affiliated with some university which should have the power to supervise that man's graduate training and in the end should attest, after proper examinations, his technical proficiency.

Just exactly as the engineering student at Cincinnati gets his practical work in shops or building construction in actual operation under private management and his theoretical training in university classes, the whole being finally attested by a university degree, so also the proposed medical specialist should get further practical training in actual practice under other specialists, and further scientific training in university laboratories, the whole contributing to the diploma or certificate which should confer his moral, if not his legal, right to work independently. I estimate that this is the only way by which the universities can contribute in any large measure to the practical training of specialists and can assume the responsibility for their certification before the public.

This is a large task—one to be undertaken conservatively and gradually, but nevertheless without delay or temerity. Careful supervision, careful selection must be exercised. The leading specialists must be urged and taught to make their clinics more than places of business. The cooperation of the College of

Surgeons and of the special societies must be sought. But the universities must take the initiative and assume lasting responsibility. The undoubted reflex effect of a university connection should appeal to competent specialists and make the task of securing their cooperation easy. As the state-wide campus has become the watchword of agricultural colleges and state universities, so the nation-wide clinic should be the ideal in the training of medical specialists.

Coming back to the University of Minnesota and its problems, I believe that the university should maintain close relations with the Mayo Clinic, a private business, just as long as that private business is properly conducted and furnishes facilities for education. I believe that the university should see that the business is kept honest and proper. If in this sense the affiliation should prove a perpetuating agency, as charged, I should be glad. Surely at the present time the prestige of the university can add nothing to the Mayo Clinic; but that the ideals of education and research should become a stabilizer and ruling motive of all private business is a consummation devoutly, yea reverently, to be wished. If this confession of heresies rejoiceth the soul of our opponents in the "late unpleasantness," I shall also rejoice.

Moreover, our controversies over the affiliation have led, I think, to an earlier clarifying of the eventual legal relations of the foundation to the university than might otherwise have occurred. It is now plain that the Mayo Foundation will be a definite part of the University of Minnesota, being indeed the name of an endowment fund for graduate medical education and research wholly controlled by the board of regents. As a separate corporation, the foundation will cease to exist when the trial period is over. Moreover, in case the clinical facilities at Rochester should degenerate, it will probably be possible for the university to remove all of the work to other places, which some people think may some time be desirable.[3]

RESULTS OF AFFILIATION

So much by way of digression. I now return to my main theme. By the opening of the session of 1915-1916, the temporary affiliation (not with the medical school, as originally contemplated, but with the graduate school), was in effect. Members of the foundation staff at Rochester had been made members of the university graduate faculty, and those fellows at Rochester who could qualify were enrolled in the graduate school. We have had, therefore, to date three years' experience at Minneapolis and two with the Mayo Foundation. What have been the results?

In the first place, to some extent at Minneapolis and distinctly at Rochester, the effect of the graduate school standards on the quality of men appointed as fellows and admitted as students has been marked. It is doubtless clear to all that our experiment is one in intensive education and that we are not at all concerned in this discussion with short courses for ordinary practitioners who desire to "brush up," although the desirability of such courses, in case they can approach the antebellum standard of Vienna, is freely admitted. For such short courses admission standards would defeat their avowed purpose; but for real graduate work the sorting of candidates is important. The graduate school has the machinery and long established standards for this purpose. This is one reason why graduate work in medicine should be in the graduate school and not in the medical school.

Counting the fellows at both places, and a few others, we have had, during the past year, fifty-eight graduate students in clinical subjects at Rochester and seventeen at Minneapolis, or a total of seventy-five These are distributed as to major interest as follows: medicine (including neurology), 15; surgery (including orthopedics), 46; obstetrics and gynecology, 2; ophthalmology and otolaryngology, 7; pediatrics, 5. These seventy-five students did their undergraduate work in twenty-six different medical schools, so that we have in our graduate school in the medical group quite as cosmopolitan a body of students as in any other division of the university. We believe this is desirable.

Seventy-five students do not seem a large number,[4] yet it is apparent that our facilities, including those at Rochester, will accommodate only a few more. Probably few universities having undergraduate teaching obligations could give good training to more graduates than Minnesota. Moreover, the number eligible for degrees theoretically might annually be one fourth or at most one third of the student number; say, fifteen to twenty a year from Minnesota. It is such calculations that have caused me to state that if the universities are really to be an effective factor in the training of specialists, they must affiliate with themselves a large number of private clinics.

The University of Minnesota has taken a step in this direction in its recent approval of the clinics of Dr. Todd in Minneapolis and Dr. Burch in St. Paul, for practical training in ophthalmology. Each of these men agrees to support one fellow who shall divide his time between the private clinic and the university. This fellow is to be allowed one half of the first year's graduate credit for strictly technical and diagnostic work in the clinic, but not more, unless clinical work of a higher type than ordinary routine office procedure shall be provided and "evidence of satisfactory productivity in investigation connected with this work be furnished." These provisions indicate the type of university control that we deem to be necessary in affiliating private clinics.

Many other phases of interest from our experience might be noted, but I prefer to confine myself to those which have come to the front in connection with the presentation of the first group of candidates for the advanced doctor's degree. We shall grant four such degrees at our commencement tomorrow; and they will be, as I have indicated, the first ever conferred in clinical science. I shall note at random some interesting happenings of the past few weeks.

First as regards degrees: As I stated, we offer the degree of doctor of science, this having been always an earned degree at Minnesota. One of our candidates, however, asked for the degree of doctor of philosophy in surgery. This was Dr. McWhorter, a Rush graduate known doubtless to many of those present. His request was granted.

Now the question presents itself, should not the Ph.D. degree indicate the highest earned distinction in surgery or medicine as well as in physiology or chemistry? I think it should, and that Dr. McWhorter

3. Since the delivery of this address, a proposition to the above-mentioned effect has been made by the Drs. Mayo and accepted by the regents of the University of Minnesota. The foundation is now an integral part of the university.

4. In addition to these, twenty-eight were enrolled in the fundamental departments, anatomy, physiology and physiologic chemistry, pathology and bacteriology. Of these, ten worked at Rochester, and eighteen at Minneapolis.

in making his request showed a fine appreciation of the desirability of continuity and uniformity in academic degrees. New degrees always have indefinite significance.[5] The Minnesota experience shows that graduate work in clinical science can be conducted under the same standards and rules as graduate work in laboratory science, or in social science, or in agricultural science, or in languages. No new degrees should be introduced until the old ones distinctly fail to meet the need. I doubt not that those who will guide your new graduate work in medicine here at Chicago will take this view, and I trust that the Ph.D. degree, the honorable mark of so many Chicago men who are leaders in all the fields of natural and social science, will be the mark also of those who go out from here as leaders in clinical science.

Medical men are, I believe, unfortunately disposed to look lightly at the word "philosophy." It seems to them to connote unpractical theorizing. I should like, as a long resident but never quite a naturalized citizen of medical land, gently to chide my clinical brethren, for I think that quite as much unpractical and unscientific theorizing is raised per acre in the clinical field as anywhere else in the broad world of learning—and think how many acres there are in that field! One of the most striking features, by the way, brought out by the recent examination of candidates at Minnesota was the lack of philosophical and historical background for their knowledge. Medicine is top-heavy and ever spreading. How to keep the foundations solid and commensurate with the superstructure will always be a big problem in graduate medical education. The philosophy and history of science and of medicine should find a place in every scheme of graduate study.

Each of our students works, as I have said, under an advisor. It is but natural, therefore, that considerable diversity should exist in the courses which have been pursued by our candidates for degrees at this commencement. Some advisors lean more to the practical side than others and neglect the fundamental sciences. Some advisors have kept their students in contact with cases to the practical exclusion of opportunity for research and reading. An apparent result of this policy is seen in the fact that the theses of two candidates were rejected as inadequate for the doctor's degree, from the standpoint of original investigation. These candidates were accepted for a master's degree. Their examinations revealed a grasp of diagnosis and practical surgery quite equal to that of any of the others. They lack only the evidences of original research.

All this shows that we shall fight again, and every graduate school of clinical specialities will fight again, the old battle in education between the theoretical and the practical, between pure science and applied science, between principle and method. A recent setting of the question as applied to army officers is beautifully put by Donald Hankey in his book, "A Student in Arms." He finds, as all must find, that both the university and the practical school (in his case the military school) have something necessary to contribute. I recommend his essay to all interested. Beyond a few dogmatic statements I shall not go into this question.

I believe in a solid scientific foundation for the undergraduate medical course and a few feet more of well-seasoned concrete for the big guns of specialism. I point to the fact that the physician will see sick people all his life; chemical and anatomic laboratories, probably, for a limited period only. I hold strongly to the doctorial thesis, first, as evidence to the faculty that the student has caught the scientific idea; secondly, as evidence to the scientific world of the type of work the university is doing. I believe, finally, that that thing you call judgment—surgical judgment, let us say—which is so much more than manual dexterity or delicate sensory discrimination or intelligent understanding of isolated phenomena, is better developed from a hundred cases studied exhaustively, considered in all aspects, read up in the literature, worked over in the laboratory, than from a thousand cases passing, with blending after-images, in the rapid cinematograph of hospital routine.

All this makes me believe that at the Mayo Clinic, and in all places where clinical graduate work is undertaken, the student must be held back from clinical plethora, from engorgement with routine observation, diagnosis and care of the sick. He must be given time for laboratory and library work; for meditation and expansion; for the development of originality and the evidence therof—his doctorial thesis. If we don't do this, the research aspects of our work will dwindle away. Our product will be trained and safe, but sterile. Our graduate medical schools, of which so much is just now expected, will be amplified, but not glorified, polyclinics.

And for all these reasons I believe that graduate work in medicine should be closely allied and alined with and, indeed, a part of the regular work of the graduate school. The restraining hand of the dean controlling the graduate work of all the arts and sciences may save the youngest child, medicine, from many a disastrous fall.

But over against the necessity for substantial science as part of clinical graduate work, I see the need for the technical proficiency that comes from repetition and for the diagnostic skill that is not so much born as derived from repeated observation. We shall always have to compromise between the theoretical and the practical. The question is where to draw the line. I say, keep it safely on the side of science.

In this connection I wish to present the case of one of our candidates which illustrates an unexpected turn of our educational machine. This man for three years held a fellowship in internal medicine. He was most ingenious in attacking all kinds of problems dependent on refined physical apparatus. His interest and thought were all in this direction. He was full of problems and of enthusiasm for research. But his examination developed that his knowledge of internal medicine was hardly better than that of a senior student, and he frankly confessed that he had no interest in practice. Our whole plan had been to produce a combination of scientist and practitioner; but here the amalgamation failed from the practice side, just as with others, in a measure, it had failed from the science side. It was plain that the degree of Doctor of Science in Internal Medicine as a mark of a trained specialist was a misnomer for this candidate.

5. Some years ago a student applied for admission to the St. Louis University Medical School, presenting a certificate indicating that he had an "M.A." degree. The college issuing the certificate was an unknown Kentucky institution; but I judged that its master's degree must be at least equal to a high school diploma (at that time our standard entrance requirement), and therefore admitted the candidate. It soon became apparent that he could not carry the work of the medical course, and inquiries developed the fact that the degree he possessed was "Master of Accounts!"

He was given the degree of Doctor of Science without designation as to department.

Of the various requirements for the advanced degree the reading knowledge of French and German has been, in our experience, the hardest for medical graduate students to meet. Although all of our candidates had at least the two years of college work that is now the accepted minimum standard of entrance to the better medical schools, their linguistic training was evidently very weak. Moreover, during their period of fellowship, particularly at Rochester, they do not appear to have been impressed with the necessity of acquiring the languages and using them as tools. I feel that this is evidence that the advisers of these students did not point out the library as the great repository of knowledge and did not insist on systematic reading.

A knowledge of the principal languages of science is a universal requirement for the Ph.D. degree. The degree in medicine cannot be placed on a lower level than that in history or psychology or chemistry. Moreover, the enormous medical literature in German and French renders it imperative that every investigator and every progressive practitioner should know these languages. Otherwise, he can never keep abreast of the times and must always get a large part of his knowledge through belated and abbreviated abstracts. When the war is over, the commerce of science will be reestablished and its essential medium of exchange is found in the three great languages, English, French and German. They are, moreover, a mark of culture and a guide to that tolerance and sympathy which are characteristic of a true scientist. For all these reasons the graduate school at Minnesota adheres to the language requirement for advanced degrees in medicine.

There are other questions raised by our experiment to which, if time permitted, I should like to direct attention. For example, to what extent should graduate work in clinical science be subsidized, as, for example, by our system of fellowships? Of course, these are really assistantships. The recipient of a stipend earns it. The question may be raised whether young doctors without financial aid, after the long and expensive M.D. course, can afford the time and money for such a term of graduate study as I have described. Would our plan, if made universal and not subsidized, tend to shut out the poor man from the higher walks of medicine or unduly delay entrance into specialism? I leave this for you to consider. The question as bearing on undergraduate medical education has been touched on editorially several times in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Likewise, it would be a delight to consider the proposed new degree for specialists who are so lacking in energy that they cannot produce a thesis, namely, the degree of "Doctor of the Practice of Medicine." In imagination I can see this striking trademark stenciled on the smug and satisfied sacks ground out by every so-called "practical" educational mill in the country. But I hope that neither "now" nor "eventually" will the "Doctor of the Practice of Medicine" be added to the grist of medical degrees produced near the Falls of St. Anthony.

CONCLUSION

Passing by these interesting topics I feel that I should attempt to point out to you, the members of this graduating class, how the new movement in medical education may relate itself to, and possibly change, the practice of medicine into which you are about to enter. The next thirty years will be your generation—yours of all the thousands of generations of men; yours to grasp, to shape, to live. In it you will make your mark deep or shallow, enduring or without a visible trace. But it will also make its mark on you. What are the changes to which you may have to adjust yourselves?

What, first, of private practice? There are those who will tell you that private practice is going out; that the old family doctor is already dead. They say that in these days of organization and cooperation, of hospitals and automobiles, of specialism and efficiency, there is no room for the family doctor.

There are those who argue for the family health officer to keep everybody well and turn over to the appropriate specialist any who by unreasonable chance become ill. Others see the whole medical business socialized, and medicine, like education, supported by the state as a free gift to the people. The group system has its advocates and has made notable progress.

I am in sympathy with all these movements. They should have your careful consideration, and to such extent as may be, they should work themselves into the life complex of your generation. Moreover, the evils of the present competitive system of medical practice, with its dollar baiting, its unjust distribution of emoluments, its inability to render equal and the best service to all classes of mankind, are apparent and must be improved wherever possible.

Nevertheless, I perceive that the practice of medicine is deeply rooted in that thing we call human nature; that it gets back and down to the fundamental instinct of survival, and rests firmly on the eternal rigidity of protoplasm. Changes will undoubtedly take place in the practice of medicine. Perhaps we can foresee the trend of such changes. We may admit that this is an age of unusually rapid social evolution. But still we must see that it is evolution. New species do not spring unheralded from the inorganic world. I predict that general practice will endure, will adjust itself to specialism and to group medicine and to public medicine. In the ecologic relations that shall be developed I predict that the ancient plant of private practice, rooted so deeply in human nature, will still be the center around which the newer varieties will flourish.

Certainly it is not hard to prophesy for the next thirty years and to declare that most of you for several years and many of you for life will be family doctors; better age for age and stage for stage, than your fathers, but following, nevertheless, essentially in their footsteps and entering into the same intimate personal and family relations with your patients. I think you should look on that as a good life, and that something more than the current and "exaggerated" rumor as to the demise of the family doctor should be needed to drive you from the ancient and honorable and useful career of private practitioner.

At the same time all of you should study and take part in the new movements in medical practice. Some of you, under favorable circumstances and in favorable localities, will, I trust, take part in those cooperative ventures that are coming to be known as group medicine. Some of you will be in public health work as school physicians and the like. I trust you may hit on a happier day than this and be able to treat as well as diagnose. At present, the school physician says, "Yes, you have diphtheria. Run along and see a doctor." It is as if, when a man is attacked on the street,

the policeman should say, "Yes, you are being robbed. Hustle quick and hire a private watchman to defend you."

Others of you, finally, will prepare for the higher but narrower work of specialism. You will bear in mind that every narrowing of interest tends to narrowing of sympathy. You will do your best to counteract this tendency. As the field of view becomes smaller, as in the microscope, you will cultivate that imagination which can see the whole. You will recognize the need of further training and will not be content with a specialism that is self-announced and without foundation.

You will not be content to repeat in indefinite sequence the procedures and practices of others. You will not be satisfied to be resonators. You will sound a note of your own. You will find out something new. You will go forward to your special work, if not with an advanced degree, such as I have described, at least with a training and with ideals approximately such as are here laid down. You will be scientific specialists—scientific surgeons, scientific pediatricians, etc.—and to your work will come a pleasure and a compensation not to be found in routine, and not to be derived from much doing and much getting and much hoarding away.

THE MENACE OF MOUTH INFECTIONS *

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There is no more impressive sequence than the presence in a patient of a disease or abnormal condition, such as infected teeth or gums, and the later surgical eradication of the focus of infection; or, to make the sequence terse and logical, let us put it thus: patient; ailment; crowned, bridged or decayed teeth, inflamed gums, or pyorrhea, or all of these things; roentgenograms of these suspected areas demonstrating pus and degenerated bone; operative demonstration of pus sinuses and cheesy, broken-down bone; and lastly, but unfortunately not always, the cure of the patient.

In this age, in which the laity has acquired from periodicals a smattering of medical science, and therefore thinks it has a perfect right to criticize medical men and to ridicule what they term "medical fads," let me urge that the nearest relative of the patient be present at the dental operation, and be placed in close proximity to the foul tooth, foul crown, or foul pus that is extracted from the mouth of the loved one. I know of no more impressive demonstration to the ordinary layman, and he often becomes a hysterical enthusiast for the removal of infected teeth, or even of those that may possibly be infected.

MENACE OF CROWNED TEETH

Cruelly awakening to the physician is the demonstration of a bacterium in the blood or in a distant lesion, and a late demonstration of the same germ in an extracted tooth or in the secretions of a pocket in the gum. I do not believe that there is a greater menace to health today than crowned and bridged teeth, to say nothing of imperfectly filled and dead teeth, and of pyorrhea alveolaris. Furthermore, infection of the tonsils and the sinuses adjacent to the nose must never be overlooked. If such infection has not caused symptoms, it will do so, and its eradication is the only safety.

From infected areas in the mouth many pathogenic organisms have been isolated, probably the most dangerous being the pneumococcus and the *Streptococcus viridans*. We do not know how many pneumonias, following or accompanying influenzal affections, occur, because pneumococci are being carried in the mouth. We do not know how many times irregularity, weakness and actual disease of the heart are due to germs harbored in the mouth. Neither do we know how frequently the *Streptococcus viridans* is the cause of heart disease or adds its fatal potency to an already established chronic disease.

We do not know much about the *Endamoeba buccalis*, but we do know that it is probably always accompanied by other germs, and especially by the pyogenic germs. Pyorrhea alveolaris is unquestionably due to infection, but this kind of infection and inflammation does not often occur unless there is degeneration of the gum tissues, and such degeneration most frequently occurs after 40 years of age. It may be here noted, parenthetically, that chronic colitis, or at least decomposition in the colon, also occurs most frequently after the age of 40, and both of these conditions are very frequent in people in middle life. Is the intestinal disturbance a sequence of the mouth infection?

Connellan and King[1] have isolated a nonpus-forming diplococcus which they believe produces dangerous toxins. They find these germs in the crypts of tonsils, and patients suffering from arthritis, asthma, endocarditis, myocarditis or nephritis have been found to harbor these germs in their mouths. They advise producing an autogenous vaccine and using this for some time before such diseased tonsils are eradicated.

It is not my purpose either to offer or to discuss roentgenograms of damaged teeth and gums; but let me assert that no dentist should devitalize, or attempt to fill the roots of a devitalized tooth, which is to be preserved, without the aid of roentgenograms; that every case of pyorrhea alveolaris, every suspicious root, and occasionally all crowned and bridged teeth should be subjected to the scrutiny offered by the roentgen ray. It is useless to agree on the removal of one infected tooth and possibly leave other infected teeth in the mouth of the patient, and yet such carelessness is repeatedly agreed to by both physician and dentist. Also, it is difficult to compel a dentist to operate immediately on all infected areas. He does one thing at a time, and then takes up something else. What surgeon would remove one point of infection and leave half a dozen others, or even one other infected area?

There must be hearty medical cooperation between the physician and the dentist in order to decide, in any individual patient, what teeth shall be preserved, what teeth must be removed, and how best to treat infected gums; also what part a diseased condition of the patient plays in the mouth condition.

M. I. Schamberg,[2] a noted New York dental surgeon, says:

> Crown- and bridge work, as well as all work upon pulpless teeth, should be conducted by men who would specialize in that work, and who would, through the medium of x-ray, satisfy themselves that they are not putting a beautiful super-

1. King, J. J.: Further Observations on the Connellan-King Diplococcus Throat Infections, THE JOURNAL A. M. A., Jan. 13, 1917, p. 91.
2. Schamberg, M. I.: Journal of the Allied Dental Societies, December, 1915.

structure on a weak foundation. Roentgenograms should be taken from time to time after the insertion of such pieces, to determine the state of health or disease of the hidden parts. Patients' mouths should be kept free from infection at all costs, even though it should mean the removal of every tooth in the head. If it can be done without sacrifice of the teeth, so much the better, but a toothless mouth is to be preferred to one containing a single focus that menaces the health of the patient.

It should also be urged that however well a patient is, these germs of infection, wherever they may be, are ready to do him some injury whenever an acute infection attacks him, or when his own systemic strength is in any way reduced. They are all waiting an opportunity, and how can we excuse a physician for omitting to study his patient's mouth? How can we excuse the dentist who waits until tomorrow, or next month, or six months hence before he removes a source of infection which he has recognized? Or how can we excuse a dentist for carelessly constructing bridges or crowns in the mouth of a young patient, knowing the danger from infection in the years to come? In other words, have we the right to crown to the gums, even if they are wonderfully well fitted? Have we the right to construct permanent bridges, when an aseptic bridge or a removable plate is more sanitary?

IODIN INJURIOUS

I do not propose to discuss the treatment of pyorrhea alveolaris, but let me emphasize the fact that dentists use iodin too freely on the gums. A little pain here, or a little infection there, and the gum is injured by repeated applications of iodin. We know the value of iodin as a counterirritant or as a germ destroyer. We also know that it destroys the vitality of tissues, and many a gum has been burned and blistered, and inexcusably made a region for more infection. We should remember that there are always germs in the mouth, many of them harmless, but also many ready to attack a broken mucous membrane or ready to be absorbed into the system through such a lesion. Therefore, care should be exercised not to injure the mucous membrane of the mouth or gums, especially when an infection is being treated.

I find that infected teeth and tonsils are frequent causes of thyroid disturbance, causing both hypersecretion and hyposecretion, and no medicinal treatment will effect a cure until the foci of infection have been removed. The absorbed toxins produced by the germs of infection and by the local suppuration often act peculiarly on the thyroid gland. The thyroid may be considerably enlarged, yet may give absolutely no symptoms of increased secretion and need not be cystic. Something irritates the gland, and then something else inhibits the result of its increased activity. This is shown by the surgical removal of the source of the mouth infection, and sometimes marked symptoms of hypersecretion immediately occur. I have seen three such instances. In one case the gland became greatly enlarged after the operation, exophthalmos occurred, and a tachycardia of from 140 to 160 developed. Before the operation, absolutely no thyroid symptoms were present, except a slightly enlarged gland.

Not only the thyroid, but many other internal secreting glands of the body, are disturbed by the absorption of germs or toxins from the mouth. The suprarenals are, probably, especially acted on, as we have great changes in blood pressure in these patients. Many a patient with a very high blood pressure shows no arterial and no kidney excuse, no intestinal toxemic excuse, and this high pressure persists, even when the diet is made rigidly vegetarian. Consequently, it is self-evident that there is internal secretion disturbance. Whether the suprarenals hypersecrete, or the thyroid, and one or two other glands perhaps undersecrete, it is difficult to determine, but that these glands are disturbed there is no question. Also there are many instances of very low blood pressure in these patients, and again we may not know whether the toxins depress the nervous system, or the vasomotor center; or whether they stimulate the thyroid to increased secretion of vasodilator substance, or inhibit the suprarenals as to their vasopressor substance.

Not infrequently patients with glycosuria have mouth infection. These cases are likely to be without typical diabetic symptoms, namely, without polyuria, and without thirst. In these cases there may be pituitary disturbance, or suprarenal disturbance, or pancreatic disturbance, or the glycosuria may be caused by the absorption of something that interferes with the liver or with muscle metabolism.

We must recognize that germs may be present in and around gums, allowing dangerous absorption of their toxins, without any local manifestations of pus. This is true of some germs that cause arthritis.

Again, there can be no question that the constant absorption of irritants or poisons from the mouth can cause irritation of the kidneys and subsequent chronic nephritis, even if focal infection of the kidneys is not thus caused, and many a case of autogenous infection or purulent infection of the kidney occurs without any apparent tangible excuse. Probably these obscure cases occur mostly from concealed infections of the mouth, tonsils or one of the sinuses adjacent to the nose.

We do not know that this continued absorption of concealed irritants in the mouth for months and years may not cause arteriosclerosis. All sorts of gastrointestinal disturbances, such as hyperacidity and ulcer of the stomach, can be caused by such mouth infections. And let us remember that cancer of the stomach seems to be on the increase. Recently I saw in consultation a patient who made a profound impression on me. He was a man but little over 40, who had, before it was discovered, far advanced, inoperable cancer of the stomach, and besides several bridges, there was hardly a tooth in his mouth that was not crowned. He had been fussing with his teeth and visiting dentists for fifteen years or more.

Statistics prove that cardiovascular-renal disease is increasing enormously, and we know that, in the last twenty-five years, crowns, bridges and pivoted teeth have also increased in a most extraordinary fashion. One has only to look into the mouth of every patient who enters one's office, of every patient who enters the hospital or the dispensary, to see how hard the dentists are working.

One of the saddest things that can happen to a person is infection of the blood with the *Streptococcus viridans*. This germ probably always gains an entrance through the mouth, and if we should cultivate the pus and secretions from the patients who have diseased mouths, we should probably be astonished to find the number of times the *Streptococcus viridans* was present. In the vast majority of cases the only hope for the patient with *Streptococcus viridans* is to eradicate it from the mouth before it infects his blood and causes malignant endocarditis.

The relation of mouth germs to arthritis deformans seems proved, hence eradication of the source of infection before the joints are affected should be the preventive treatment of today. To allow infection in the mouth to persist until this painful and crippling disease develops is inexcusable.

For nearly two years now, at a public tuberculosis institution of which I am chairman of the medical board, we have examined the mouths, corrected the teeth and removed sources of infection of every patient who entered the institution, and owing to this preventive treatment we have had less tonsillitis, fewer sore throats, less indigestion, and less influenza and colds than we had before we began these mouth investigations.

I think that both dentists and physicians have been very slow in discovering the harm done to patients by crowns and bridges, by leaving infected teeth in place, and by improperly filled teeth. Physicians do not pay proper attention to, and many times do not even look into, the mouths of their patients. I look back with chagrin and shame as I think of the probable cause of the chronic invalidism of some of my patients of years ago. But with this admission of neglect in the past, I deplore the present necessity of being compelled to fight with both the patient and his or her dentist for the removal of infected foci in the mouth. The dentist frequently will not cooperate. He naturally dislikes to remove his own fine handiwork. Hence, I repeat, when a bad tooth comes out, or a dirty crown comes off, let the patient, or, if he is anesthetized, his nearest relative, smell of it. This is an educational propaganda.

CONCLUSIONS

1. Most unexpected tolerance to pyorrhea alveolaris and to tooth infection is found.

2. Chronic invalidism may be caused by mouth infections.

3. The blood pressure may be raised or lowered by mouth infections.

4. The thyroid gland is frequently enlarged, and may hypersecrete or hyposecrete, in these infections.

5. Serious disturbances of the blood, heart, kidneys, stomach, intestines and joints are frequent from mouth infections.

6. Glycosuria can be, and perhaps true diabetes mellitus may be, caused by mouth infections.

7. Serious distant focal infections may occur from mouth infection.

8. Serious brain and nerve disturbances, as well as neuritis, may occur from mouth infection.

9. Ulcer of the stomach, pyelitis, appendicitis and chronic colitis may be caused by pyorrhea alveolaris and mouth infection.

10. Pneumonia, especially that which follows influenza, may frequently be caused by pneumococci long carried in the patient's mouth.

11. No treatment of these conditions will be of any avail until the mouth is made clean.

12. Stock or autogenous vaccines are not very promising as to their therapeutic value, but in obstinate cases they should be tried. Therefore, it is generally well to grow a culture from the infection in the mouths of these patients, that autogenous vaccines may be made and used, if desired.

13. One should be very careful not to promise a cure of a distant condition, although that condition was caused by the mouth infection. However, many brilliant cures are caused by surgical eradication of infected areas. The patient should always be told that the surgical removal of the infected area in the mouth does not remove the germ localized in distant parts of the body, nor does it immediately cure an inflammation caused by these germs in a distant part, nor will it restore degenerated tissue, but it will remove the primary source of infection.

14. It should be urged that any fresh lesion of the mucous membranes of the mouth is a source of danger, much as is a lesion of the skin. The efficiency of the integument in warding off disease germs has long been recognized. It should be recognized that fresh cuts, abrasions, and blistering of the mucous membrane of the mouth with iodin, or other strong escharotics, offer the opportunity for the absorption of germs that may be freshly received into the mouth, and more especially of germs already in the mouth.

MIGRAINE AND CHRONIC INTESTINAL STASIS

THEIR RELATIONSHIP AND TREATMENT

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By migraine is meant a condition characterized by severe attacks of headache that occur at varying intervals, with periods of freedom between the attacks. The headache is usually followed by vomiting, either of plain gastric fluids or contents, or of bile, "bilious vomiting." After vomiting, the patient usually feels better, the attack gradually subsides, and there is an interval of freedom from the trouble for a month or two, or it may be for only a week.

The term "intestinal stasis" was first applied by Lane to a condition in which there is a delay in the onward movement of the intestinal contents, accompanied by symptoms of a neurotic type. Formerly, instead of intestinal stasis we spoke of habitual constipation. In constipation we find occasionally a great number of nervous symptoms — dizziness, lack of concentration of the mind, insomnia, etc. This combination of nervous symptoms and delay in the onward movement of the intestinal contents and action of the liver is considered by Lane as "intestinal stasis"; by others, the same picture is designated as "constipation with nervous phenomena."

SYMPTOMS

In migraine it is characteristic that the headache comes on suddenly, in the midst of perfect health, although there may be a premonitory stage of short duration. Sometimes the headache is followed by a defect of vision; some persons have a glimmering light in one eye, or they cannot see well with one eye; the headache is usually in one part of the head. That is why it is called migraine, from the Greek hemicrania (on one side of the head). The headache is usually quite severe, so that the patient cannot work and may have to go to bed, and with it there are disturbances in the upper part of the abdomen, followed by nausea and vomiting, and if there is nothing in the stomach then ultimately bile comes up. After vomiting and purging, the patient feels relieved, and there may be a period of freedom for quite a while.

Patients with migraine may be in good condition and apparently perfectly well; or they may belong to a group which suffers from enteroptosis and weakness, and are thin, anemic individuals. They do not feel well between the attacks, they cannot work much, their appetite is not good, and they are constipated; but these complaints are of minor degree and do not incapacitate them. Among the abnormal conditions may be some disturbances of the vision, or disturbances of the abdomen or of the genito-urinary organs.

In chronic intestinal stasis or simple constipation with nervous phenomena, the bowels do not move well without resort to some aid. Besides the constipation, the patients also complain of a variety of symptoms, sleeplessness, headache, etc. The headaches are not severe like those of migraine, but are mild and come on almost daily, particularly in the morning. Then there may be slight dizziness, and the patient cannot concentrate his mind and cannot do the same amount of work as formerly. His appetite is poor; sometimes there is nausea, and sometimes there is a fear of going out alone or of going to church. These nervous phenomena may be exaggerated; sometimes the constipation is associated with melancholia. That is not an infrequent combination. Constipation exists also in a high degree in the insane.

In regard to the connection of these conditions, some physicians say that constipation is at the root of these troubles, causing even insanity. I myself do not believe this, but rather think that commonly the reverse is true, namely, that persons who are nervously upset and are insane have their constipation increased by their nervous condition. I once saw an insane patient with an immense very hard tumor in his abdomen that could not be differentiated from a large neoplasm. When it was learned that the bowels had not moved for a week or two, it was easy to make the diagnosis that it was a fecal mass. He was given a strong cathartic, the bowel was washed out for a number of days, and the tumor disappeared; but the patient's insanity was not cured. Although the constipation was relieved, the insanity persisted for a whole year, when the mental symptoms cleared up.

ETIOLOGY AND TREATMENT

French writers have given us the theory of autointoxication. Bouchard was the first to advance the theory that poisons form in the body which give rise to these disturbances. Any organ which is at work creates waste products which are, so to say, deleterious to the system, provided they stay there. Usually the system eliminates them. If one does manual work, the muscles use up some of their material and produce also waste products. Naturally, these waste products are removed, being eliminated during the period of rest, so that no disturbances originate. It is the same way with all the organs of the body. In the brain, for instance, reading or writing creates waste products, just as in any machinery; there is a by-product that has to be eliminated. Our organs are so arranged that the body normally is easily rid of these waste products, and no symptoms arise.

If we go a step farther we can see that if the required period of rest is not given, if the work is kept up too long, the waste products accumulate in a greater degree, and they are not eliminated in a complete manner. For instance, if a person can work six or eight hours every day and his organism is so arranged that he can rest in nine or ten hours, and he then works for twelve hours a day and does not get the required rest period, the system does not get the needed rest, and disturbances arise.

These disturbances may be considered as the defensive mechanism of the organism. To apply this theory to migraine: If there is a mental strain going on in some way, the patient doing too much work, reading or dancing, or taking part in too many social happenings and not sleeping or resting enough, the brain does not get sufficient rest and does not have time to regain its normal condition. Some waste products accumulate, and every day there is an increase in their amount, so that ultimately there is a catastrophe. The body tries to create something that will compel the organism to rearrange matters, and there is a spasm of the blood vessels on one side of the brain which makes itself felt as a hemicrania. The patient has a headache due to that spasm and has to lie down and rest more; during this time the restoration of function of the brain is completed in a normal way, and elimination takes place. The headache is then relieved; a relaxation of the blood vessels takes place and reestablishment of equilibrium ensues.

Elimination can be helped by emptying the bowel. The eliminative organs are the kidneys, skin, lungs, liver and digestive tract. The waste products are first taken up in the blood. How does the brain, for instance, get rid of the accumulated waste that must first be taken up by the blood? The veins do their share first. Part of that blood goes to the liver through the arteria hepatica. I do not speak here of the portal vein. The latter lies there as the barrier to prevent anything from passing through into the blood which comes directly from the digestive tract. But outside of that the other blood — only a part — goes to the liver. That brings something for the liver to work on; but the digestive tract has also the power to eliminate. Now, if the patient takes a cathartic or vomits, a part of the accumulated waste products is eliminated. The gastric juice is not only a secretion but also an excretion; it is excreted through the stomach. Sometimes urea can be excreted through the stomach, and still more through the liver. The bile brings down the excretory substances of the liver and empties them into the intestinal tract. If a patient has a migraine and we give him calomel, he has a greater flow of bile and the elimination is increased, and vomiting and purging clear out the system.

In the autointoxication theory in intestinal stasis, it is quite different. Fecal matter contains decomposed material and innumerable bacteria. The idea that poisonous substances reach the organism from this source is at first thought plausible. But normally the digestive tract (including the colon) does not take up any poisonous material. The mechanism of the system is so arranged that its work shall be kept up, and the colon is so constructed that the fecal matter can be discharged without much difficulty. Many physicians are imbued with the idea that if the intestinal contents remain too long in the system they will give out to the system poisonous substances which create all the symptoms before mentioned, and that we have to deal with an intestinal autointoxication.

If this theory can be worked out without awakening too much fear in the mind of the patient, it will not do any harm; but if it is exaggerated, great harm may be done. This point must be emphasized, for it is of importance. Lane said that if there is some delay in the motion of the contents of the bowel — and this

is especially true in cases of enteroptosis when there is a prolapse of the colon and an irregularity in the position of the colon, which creates an autointoxication — this is the cause of the troubles associated with constipation, as sleeplessness and headaches, and also of many other ailments, such as chronic rheumatism and gout.

This theory has been overestimated, and has taken such root in the minds of some physicians that if they see a patient who is constipated they think he must be told of it. "Why, you cannot live that way, with poisoning going on in your system all the time; if that keeps up, all will come to an end." The patient goes home and worries, and doesn't know what to do. He tries to do exactly what the physician tells him. He eats no proteins, but does not feel much better. He comes back to the physician, who says: "Your trouble is in the colon; the colon is not exactly right. It is too long. Instead of going in a more or less circular way, it forms angulations and drops down, and that is wrong. There is a delay there, and that is where the trouble lies." If the patient does not get better within two or three weeks of treatment, operation is suggested for the purpose of shortening the colon, cutting out part, or perhaps the whole of it, performing an ileosigmoidostomy or a colectomy.

Were this theory really correct and could we prove it, we might at least try such a procedure; but in reality such patients feel much worse after operation. A great many are made worse, and some have died as a result of it. In order to demonstrate that we really have to do with an autointoxication, we ought to be able to produce the poison by experiment and then to inject it into animals and show that that poison causes these symptoms, not in one or two instances, but in every instance. If that could be proved, we might speak of it; but it has not been proved, and much harm has been done by teaching it, in making people afraid of themselves, making them afraid to eat and afraid of their digestive tracts, especially of the large bowel which, according to their minds, is a place of poisoning.

It is just the reverse. The colon is our best friend. Instead of being a place of poisoning it is a place in which things can be kept without harm and later on eliminated. It serves a very useful purpose. It can take good care of the excrement and can work it up better. If we lose the colon, we are much worse off than with it. I speak from experience, for such persons come to me almost every day worrying about their large bowel.

This is all wrong. Unless there is some organic disease in the bowel which gives rise to ulceration, for instance, in such a way that it is exposed to the absorption of fecal matter — and such instances are very rare — the mere presence of fecal matter will do no harm, for so long as the mucous membranes are intact, no matter what the shape or position of the colon — big or little, up or down — no surgical intervention will be required. The latter will be reserved for organic diseases (strictures, or partial stenosis by bands, etc.).

In regard to the connection between the nervous phenomena and constipation: In a great many cases, the nervous phenomena do not originate from the constipation. This has been proved by Dunin of Russian Poland. Two important points can be brought out to demonstrate this. Constipation can be established for a number of days by giving a patient opium, and yet he will be perfectly well, showing that the fecal matter does him no harm. If a patient with these nervous phenomena — sleeplessness, distress, etc. — is given a nerve remedy, say 15 grains of bromid, a movement of the bowels will at times take place without a cathartic. This will not be true in all instances, but will in a great many, showing that the primary factor in the condition is the nervous state of which the constipation is the consequence.

It is important to know that fear and constant anxiety about having a movement is bad for the patient; it makes him worse. The more he is frightened and made anxious about having the movement, the worse is the constipation; the fear and anxiety exert an inhibitory influence on the peristalsis.

TREATMENT

In cases of migraine, we first have to look into the condition of the system and find out any existing faults, such as astigmatism, which should be corrected by proper glasses; enteroptosis, by giving the patient a bandage; chlorosis, anemia, by building up the system and getting the patient into a normal state. For, if the organism is below par, anomalies will develop much more quickly, and the migraine will come on more readily than if the body is in good condition. The first thing to be done is to try to adjust any existing anomalies of the body.

During the attack, the desired rest must be secured for the patient; if possible, in bed. No nourishment should be taken, or only very little liquid food; and a mild aperient or a saline enema should be given. If these measures are not sufficient, citrated caffein, 2 grains, in conjunction with pyramidon, 5 grains, may be administered twice daily. In rare instances, codein or morphin may be required. All of these remedies act well and should be given as needed. Calomel is good and can be administered when indicated, and injections may be given to wash out the bowel. In a day or two the migraine is over and the patient returns to normal, and then we decide about other measures to adopt to prevent, if possible, the return of the migraine. If we succeed in eliminating all the causative factors, the migraine will not reappear; but if we cannot do that we can at least cause the attacks to be milder and less frequent.

In habitual constipation, or intestinal stasis with these nervous phenomena, it is of first importance to reassure the patient by telling him that in case he is constipated no harm has been done to the system. We must take away the fear of poisoning. The patient should be told to eat, but not to overwork, and his bowels will move all right; also to go to the toilet every day at the same hour, in order to reestablish the habit that has been lost.

In many patients constipation is due to a one-sided diet, and they have to be taught a proper diet. They should be urged to eat plenty of bread and vegetables and fruit, and plenty of salads. The more indigestible food these patients take, the better. It increases the activity of the digestion and augments the peristalsis. If they are given food that will digest readily there is too little work for the bowel to do. Many patients take too little water. These should be encouraged to drink more water, since drinking water between meals increases the action of the bowels.

If all this has been done and it is not enough, the question arises whether we are justified in giving the

patient cathartics. Mild aperients are rational. If the patient does not do well enough with dietetic measures, we must resort to other means. There is no harm in them; also sedatives, as already mentioned, should be given. As mild cathartics, I would consider cascara sagrada or tincture of rhubarb, 15 grains twice a day; also small amounts of licorice powder. These remedies can also be employed in combination with agar-agar. Agar alone is sometimes sufficient. It is a substance which takes up fluid and does not give it up readily, but retains some of it. Constipation is sometimes due to the stool being too dry. The water has been taken away by the digestive tract, the excrement is too dry, and the peristalsis cannot push it along easily. Therefore, if agar is given, which is not digested in passing through the tract, it takes up fluid and lubricates the fecal matter and gives it a more moist character and appearance. It is helpful to the bowel and eases the movements, so that it can be given in large quantities. But often this is not enough, and the combination of a mild cathartic remedy with it is beneficial. The idea of using the cathartic remedy in this way is that instead of being absorbed in the stomach it is carried along farther in the tract. The agar has the advantage that if the remedy is incorporated with it, the remedy does not act too quickly but emerges slowly along the entire digestive tract by the process of osmosis. That is why these mild cathartic remedies incorporated with the agar act so much better than either alone. In this way one can give phenolphthalein-agar or rhubarb-agar with great benefit. The principle with all these remedies is that instead of increasing the quantity the patient should be told to take a little less gradually from day to day or week to week, so that ultimately he may not need to take anything; but if the patient does not succeed in this, there is no harm in taking a little once in a while.

No one should be operated on for these conditions unless there is some organic lesion present. If there is a stricture of the colon there are sometimes fever and vomiting, and an operation may be required; but not with these symptoms of plain, habitual constipation. In such cases an operation is not justified. I well know that my remarks conflict with the views of others. These are my views, and I assure my colleagues that my experience leads me to state that they can relieve without operation their patients suffering from constipation.

In treating patients with habitual constipation, saline enemas may be used, and olive oil injections may be given. The latter is especially good in spastic constipation, when the fecal matter is hard and dry. An injection of from 5 to 7 ounces of olive oil may be given, and left in the bowel over night. This treatment may be continued for two or three weeks every night, and then it may be given every other night for a few weeks. That is apt to cure the patient. Klemperer has given water instead of oil with good results, but the oil is better. It is not necessary to give these injections too high up. It is well to have the patient lie first on the left side, and during the night it will flow in. The olive oil should be used at blood temperature.

All these measures are more or less reassuring to the patient, and act subjectively as well as directly.

Liquid petrolatum is also good, but in many cases in which it does not act, agar gives a satisfactory result.

20 East Sixty-Third Street.

THE INDUSTRIAL DISPENSARY IN PREVENTIVE MEDICINE *

S. M. McCURDY, M.D.
YOUNGSTOWN, OHIO

Civilization must progress by means of ideas and ideals, and as a protest against any existing order of affairs an idea must take root in some one's mind. For the acceptance of an idea, if it is to be useful, the public must realize its necessity, since necessity is the motive power of all progress. We have repeatedly listened to statistics indicating the cost of waste produced by preventable illness, but now, as never before, we realize the importance this question has for our nation. Man power conserved now, both in civilian and military life, assumes such an important place in our preparedness schemes that all agencies must be employed for the conservation and protection of our people.

We have never been satisfied with our preventive medical work, and never can we be until we enlist new forces for the cause. We have placed our faith largely in police power, and have educated our people in spite of themselves to mass for community protection. We have never, through our spasmodic periods of medical education, enlisted the cooperation of the individual for his own protection. Witness the fact that, in spite of police power, our city streets are covered with salvia, and remember that it is so because individuals have not recognized the danger. Remember the work accomplished by our campaign against tuberculosis, and do not forget that in most communities many do not receive an early diagnosis because of (1) inability to purchase the services of a good physician, and (2) ignorance of the necessity for medical care.

How many cities or states can boast of having set aside beds enough to care for their tuberculous patients? How many can show me that they do not harbor tenements that are breeding places for tuberculosis? How many boards of health will tell you that all the physicians are making prompt and accurate returns of their preventable cases? Individuals must be medically educated. They must develop a medical conscience before greater results can be obtained. We have discussed the increase in heart and kidney lesions, and pointed out their early mortality, which we say represents the wear and tear of life. In any given industry do we know what a physiologic day's work is or have we arrived at the length and amount of a turn at labor by noting what the average can stand for a given space of time.

Within a very few years we have seen our preventive work take a turn for the better. In regard to children, we have recognized the fact that education is worth little without health. We know that many parents either through ignorance or wilfulness send children to school who are suffering from contagious diseases that are dangerous to others; hence the rise of school inspection, with all its benefits. We learned soon that many physical handicaps could be removed and before long parents were willing to aid in the medical school work. We presently found that some children must be placed in a selective school environment, lest their deficient mentality should ruin others. We taught our educators that children could have

* Read before the Section on Preventive Medicine and Public Health at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

incipient tuberculosis and still be educated in open air rooms without danger.

Up to within a few years ago we assumed that the man grown child, brought up without school inspection, was able to care for himself. Today we know that he has not the medical knowledge, that he is careless about his health, and that his employer often asks him to work in a place that we know is detrimental to well-being. Some industrial organizations have recognized the economic loss due to preventable illness, and are meeting the conditions with industrial dispensaries. No movement of late years holds out so much promise to preventive medicine as do these diagnostic clinics and clearing stations. Here is joined together the sum total of the health of workers and the world's production. Here is introduced into industry a spirit of humanness that is beneficial to employer and employee. Here we have a compulsory medical education for those who need it most. In this movement we shall realize the actual national asset that we must have in order to insure a country prosperous because of healthy human workers.

Industrial dispensaries demand for their success two fundamental principles:

1. Men must not have preventable illness, whether due to their own or to their employer's neglect.

2. If sick, they must be returned to work in the shortest possible time with a minimum of permanent impairment.

These diagnostic clinics have grown by leaps and bounds. Some are doing most excellent work, while others are more or less in the formative stages. We should unite on a desired program, and then from all parts of the country drive home to employer and employee this great entering wedge which will open up the way to a better knowledge of preventive medicine. Business men will recognize the necessity for medical supervision, for it promotes greater efficiency and makes for economy. They will eliminate the cause within their gates as soon as medical men show them the way. The individual and society must recognize the moral obligations resting on them and do away with those causes of illness for which they are to blame. Industry will assume the cost of dispensaries until the people can be educated to bear their own share of the burden.

Dispensaries for accidents are already a recognized obligation on the part of industry, and dispensaries for sickness soon will be introduced. The best work in this field can be accomplished by the recognition of a few fixed principles and a definite program:

1. All men working in the various industries should be physically examined.

2. All new applicants for work should be physically examined.

3. All employees should be reexamined at stated intervals, and their previous condition checked. A system should be introduced by which all men leaving work because of illness, or returning to work following illness, are compelled to go through the dispensary.

4. Educational work should be carried on among the men by means of talks, pamphlets and moving pictures.

5. The dispensary should be so equipped that it can treat minor illnesses and act as a diagnostic clearing house.

6. To insure adequate medical attention a system of insurance should be installed, the expense to be borne by employer and employee.

7. Visiting nurses should follow the patient to the home, aid in nursing care and give health and household education.

8. Later, industry should employ its own physicians to treat illness in the home, exactly as it now does in accident cases.

9. Dental dispensaries should be organized as rapidly as possible.

10. Defects in old employees must be remedied free of charge whenever possible.

Under such an organization one will insure:

1. Adequate medical attention.
2. Minimum amount of permanent impairment.
3. Diminished loss of time owing to absence from work.
4. Diminished waste due to loss in production. Lessened numbers of green men hired and increased wages to the individual worker.
5. Happier people and pleasanter industries.
6. Collection of data on the hazards of a given industry at a point most useful.
7. A real work and contribution to the cause of preventive medicine.

That such an organization is possible and can produce such results has been proved by many industries. Several firms have, on the one hand, constantly reduced tuberculosis, as their work progressed, and, on the other hand, they can show men at work in whom the disease has been arrested.

There are firms that can positively show a decreased labor turnover, and the acknowledged cause is their dispensary. Many firms have long lists of defects remedied, some pertaining to the eye, some to general diseases, and some to deformities acquired or inherited. Any number of industrial physicians can tell of the benefits of the industrial diagnostic dispensary as shown by less time off duty and by the awakening of the community to health needs.

But our work is not limited to treating sickness after it is acquired. We supervise all phases of sanitation within the plant. Water is constantly tested to see that it is proper for drinking. Water closets are arranged so that they may be sanitary. Washing facilities are installed. Work places that are insanitary whether owing to poor heating facilities or to excess of dust, poor light, poisonous gases, etc., are improved by mechanical means. Problems pertaining to hours of work and the relation of fatigue to health are being solved and will eventually be placed on a scientific basis. Rest and nutrition become a branch of the industrial physician's work, as well as all matters pertaining to the well-being of an employee.

Let us be honest pessimists and look facts in the face. Under the present system of the practice of medicine, two conditions occur. A large majority of our workers are not receiving adequate medical attention, with the natural result that there are many unnecesary days' absence from work and many permanent deformities. The science of preventive medicine has not progressed as far as is possible with industry enlisted in the cause. While I am a firm believer in the principle of health insurance and participation therein by the state, I know that the time is not yet opportune. We must go ahead with our industrial dispensaries, and they will show us the way to our dream, national compulsory health insurance.

243 Norwood Avenue.

ABSTRACT OF DISCUSSION

DR. GEORGE M. KOBER, Washington, D. C.: It has been well said that the highest aim of scientific medicine is the eradication of preventable diseases, and that the health of the people is the highest law. Now, if these are axioms, the question arises, What shall be done to secure the most beneficent results? It is evident that the solution of the problem can scarcely be left to the practitioner alone. The man who has equipped himself primarily for the cure of disease can

hardly be expected to give his utmost effort to the prevention of disease. I believe that the protection of industrial workers in all its broad aspects, including the industrial dispensary, is a public health function and clearly a duty of the state, and I am glad that some of our health departments—notably that of New York City—have assumed this function.

To get the best results it is necessary that there should be a corps of medical workers in the employ of the state whose primary function is the prevention of disease; a body composed of men who are not only only well trained in every department of medicine, but more especially in preventive medicine. Such men will not only render valuable service in the prevention of disease and accidents, but can be relied on to restore as speedily as possible the earning capacity of the wage earner. All this work should be done at the expense of the state or community. It will be found that large sums of money will be saved in preventive efforts. Moreover, it should be remembered that in the ultimate analysis the taxpayer pays the bills incurred as a result of sickness, accident and permanent disabilities in the majority of wage earners. The sooner we work to that one end the better it will be for humanity.

Those men should be full-time medical officers and should give evidence of proficiency, not only on admission, but should be subjected, every five years, to reexaminations to determine their fitness. Naturally, such a corps ought to be absolutely free from politics, and quite as independent as the Medical Corps of the Army, Navy and Public Health Service. When this is accomplished I believe we can look forward to really beneficent effects, and there is certainly hope in that direction. I realize that in spite of certain discouragements there is a growing interest in preventive medicine, as evidenced by the ever-increasing attendance in this section.

THE RÔLE OF THE TRANSVERSE MESOCOLON FOLLOWING GASTRO-ENTEROSTOMY

C. A. ROEDER, M.D.
OMAHA

A gastro-enterostomy is no exception to the rule that it is impossible to short-circuit completely any portion of the gastro-intestinal tract unless a complete obstruction is present. However, if the operation is properly performed the irritating gastric juices are drained off as fast as secreted, affording Nature an opportunity to heal the ulcer. She ejects the food when ready through the most convenient opening. It is now definitely established that we obtain equally as good results whether or not the pylorus or duodenum is blocked, and that we obtain better results for gastric ulcer when the ulcer is destroyed by cautery or excision, the former method being preferred. The good results are attributed by many to the presence of the alkaline bile and pancreatic juices in the stomach neutralizing the acid. This makes it quite difficult to explain why a duodenal ulcer becomes chronic when we know that from its beginning it is almost constantly bathed with these alkaline fluids. We have no proof that practically all duodenal ulcers do not become chronic. Not infrequently an entero-anastomosis is performed below a gastro-enterostomy, and with this procedure, as in the Roux Y operation, none of the bile and pancreatic juice is carried to the stomach, yet our results are equally as good as when a simple gastro-enterostomy is performed which allows free interchange of fluids.

Directly opposed to the therapeutic theory, many consider the presence of these fluids in the stomach as the cause of our poor results of varying degree, particularly vomiting. Various experiments and case reports, however, have settled this controversy, particularly the three cases reported by Collinson and Braithwaite,[1] in which the duodenums were resected for disease with a closure of the proximal and distal ends, forcing all the duodenal contents back into the stomach and which left the latter by way of an anastomosis. With all plastics on the pylorus and duodenum and simple gastro-enterostomies there is a free interchange of fluids; while with the Polya operation there is a common vesicle formed by the jejunum and stomach. Gerster feeds bile by tube from a wasting biliary fistula with good results.

There is no definite proof that the presence of these fluids in the stomach has any beneficial or harmful effect on gastric and duodenal ulcer. The duodenal contents evidently play a negative rôle, and nearly all patients explored properly for persistent vomiting or indefinite distress following gastro-enterostomy have shown a deficient drainage of the stomach, duodenum or afferent jejunum if a secondary ulcer is not present. Our results correspond to the perfection of the mechanical features of the operation. With gastric

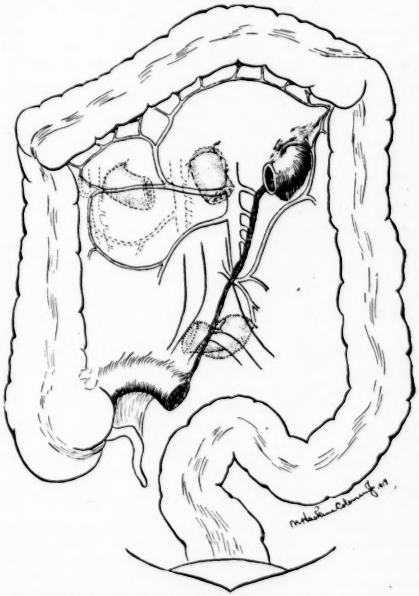


Fig. 1.—The various points at which the jejunum has been found projecting into the greater peritoneal cavity.

ulcer it is assumed that the ulcer is destroyed by cautery or knife.

In performing a gastro-enterostomy we are joining two organs of opposite function. The stomach is a reservoir, the muscular action of which is activated by its secretion, emptying itself through a relatively high opening. The duodenum and first jejunum comprise a rapid transit duct as shown by fluoroscopic exami-

1. Collinson and Braithwaite: Brit. Jour. Surg., 1913-1914, **1**, 665.

nation. In performing this operation it is essential that the stomach and duodenum are freely and constantly drained into the efferent jejunum by way of the anastomosis, and any interference at any point in the performance of this double rôle will bring on varying degrees of imperfect results. Following all

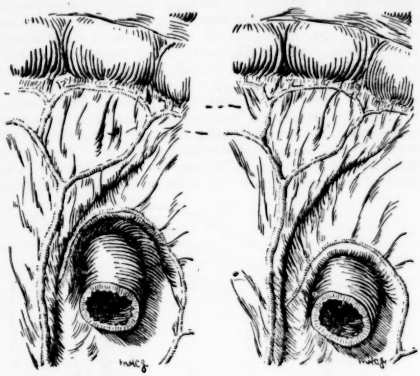


Fig. 2.—*A*, a space between the superior duodenojejunal fold and the flexure forming the superior duodenojejunal fossa; *B*, this fold attached to the bowel with no fossa present. The vessel along the edge should be noted.

gastro-enterostomies a small percentage of patients vomit for a short time, later going on to complete recovery. This no doubt is due to a moderate kink, gradually adjusting itself.

The stomach enjoys considerable excursion and the anastomosis lies sharply above the only fixed point in the gastro-intestinal tract involved. Following the operation the stomach tends to assume its normal position, retracting upward, and if dilated at the time of the operation will generally contract afterward, further increasing this upward pull. With these three factors present, namely (1) excursion, (2) retraction and (3) contraction, it becomes necessary to note the point of origin of the flexure and the amount of its fixation.

The Mayos unite the mesocolon to the stomach just above the suture line in order to prevent an intraperitoneal hernia and to help form a funnel-shaped depression in the stomach for drainage. In addition, this attachment no doubt retards the active excursions in all directions, thus preventing angulations in the proximal jejunum. The portion of the stomach surrounding the anastomosis is held firmly enough to prevent an upward pull, which, if present, might kink the afferent jejunum beneath the edge of the mesocolon and at the anastomosis, as happened in Mumford's case.[2] This attached mesocolon acts as an anchor.

The Mayo method conforms to all the best mechanical principles which are so essential to the success of this operation. It unites the jejunum right to left as near the fixed point (flexure) as possible to the lowest point of the stomach, which is opposite the cardiac orifice. Occasionally, however, the jejunum comes through the mesocolon farther to the left than usual, and in such instances the jejunum is better united from left to right in order to prevent angulation in the proximal jejunum at the anastomosis and flexure. With the opening placed at the lowest point, the ever-present gastric juice is constantly and freely drained. This free drainage prevents the painful gastrospastic wave which has been shown by Carlson to be the cause of considerable distress. The stomach then loses its hyperperistaltic stimulant, and even lapses into a temporary atonic state, as demonstrated by Wilensky.[3] The Hartman method of connecting the jejunum to the pyloric portion of the stomach has not produced the results expected. The opening is placed in a sphincteric area which has a tendency to close it. It is also placed too high and too far to the right, which does not allow constant and free drainage. It has a greater tendency to angulate the afferent jejunum.

If the mesocolon were not present, and the duodenum and first jejunum were on a free mesentery, gastro-enterostomy would be much simpler. As it is, we have a portion of the bowel (the flexure) fixed to a varying degree to the posterior abdominal wall. This fixed point acts as a potential angle and also tends to keep the flexure at a lower level than the anastomosis.

ANATOMY

The usual origin of the jejunum is at the dorsal border of the mesocolon, opposite the left border of

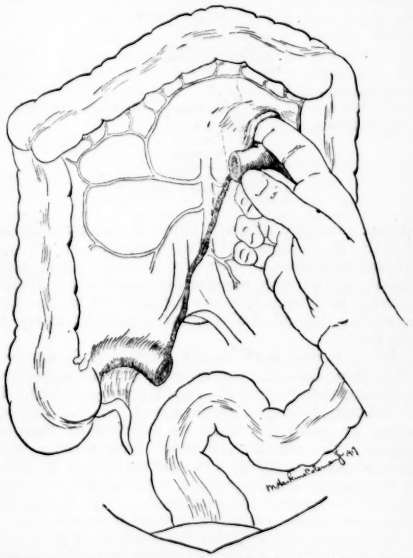


Fig. 3.—Finger inserted beneath the fold to determine the degree of constriction. Higher up the amount of fixation of the duodenum by the plica duodenojejunalis and the ligament of Treitz can be determined. It should be noted that the last two are not seen at operation.

the second lumbar vertebra. This point may vary and may be any place between the hepatic[4] and the splenic flexure (author's case), and if farther to the left than usual it may indicate a left to right anastomosis. We must look on the duodenojejunal flexure as a fixed

2. Mumford: One Hundred Surgical Problems, Ed. 1, 1911, p. 22.

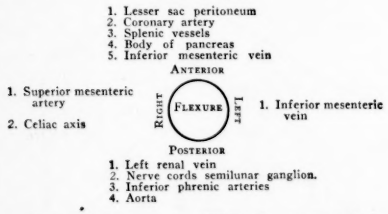
3. Wilensky: Ann. Surg., June, 1917.
4. Boyd: Brit. Med. Jour., Sept. 19, 1914.

point with an active duodenum above (Alvarez) and a free jejunum below. This flexure is held fast by three structures, two described by Crymble,[5] and the third, which is not constant, observed by myself. Crymble has shown from dissection that the ligament of Treitz and the supramesocolic portion of the plica duodenojejunalis extend from the anterior surface of the flexure to the posterior abdominal wall, thereby limiting markedly the mobility of this portion of the bowel. These structures lie above the mesocolon and are never seen at operation.

Another point of occasional obstruction I have observed is where the superior duodenojejunal fold is attached closely to the duodenojejunal flexure or just below it. When this fold, which is *not constant*, crosses the flexure with a space between it and the bowel, we have formed the superior duodenojejunal fossa; and when no space separates it from the bowel no fossa exists; and we may then have this fold, if sufficiently developed, limiting the excursion of the bowel, acting as a potential point of obstruction. This fold generally contains an artery adding to its tensile strength.

Occasionally, even without the presence of a gastroenterostomy, we find at operation or necropsy the duodenum markedly dilated. While I was assisting the late E. H. Beckman of Rochester, an occasion was offered to explore a patient for indefinite gastric complaint, and the only abnormality found was a greatly dilated duodenum, equaling the stomach in size, and extending beyond the superior mesenteric artery to the flexure.

RELATIONSHIP OF STRUCTURES AND VESSELS AROUND THE FLEXURE



Many writers attribute the dilated duodenum previous to or following operations to the compression of tense superior mesenteric vessels passing over it. It is difficult to imagine much tension on these vessels when we recall that they are attached to "floating organs," the contents of which have usually been cleaned out. In addition, the patient is lying down or is in a semirecumbent position, with the abdomen supported by dressings. Careful exploration will find the dilatation usually extending beyond these vessels.

In dividing this superior duodenojejunal fold it is necessary that one should be familiar with the anatomy in this region.

REPORT OF CASES

CASE 1.—A woman, aged 43, was operated on elsewhere by an excellent surgeon for duodenal ulcer. One week following the operation, persistent vomiting of bile and fluids started, which lasted, in spite of various conservative measures such as lavage, etc., until a second operation was performed three months later. A most interesting point was a negative roentgen-ray examination. The bismuth meal flowed freely into the efferent jejunum through the anastomosis, and the stomach emptied in less than two hours. At the second operation I found a perfect appearing anastomosis. It was soft and pliable, admitting the tips of three fingers. The lumen of the jejunum was not used up in the sewing. The opening from the anastomotic ring into the afferent and efferent jejunum seemed ample, and there was no kink at the proximal and distal edge of the new opening. There was no spur formation by mucous membrane. The afferent jejunum, the portion extending from the anastomosis to the duodenojejunal flexure, was a short loop of 2½ inches, not dilated, and it emerged from the mesocolon opposite the left border of the vertebral column and was attached to the posterior wall of the stomach from right to left (Mayo). The situation was puzzling, to say the least, as I had expected to find an obstruction. Further exploration displayed to the right of the vertebral column a greatly dilated duodenum, three times normal, extending on past the superior mesenteric artery to the duodenojejunal flexure. No superior duodenojejunal fossa existed here, which, when present, allows considerable mobility to this portion of the intestine. Division of this fold between two ligatures, as it almost always contains a vessel, relieved the obstruction. With the finger the duodenum higher up was partially freed from its attachment to the posterior abdominal wall. The enlarged opening was carefully attached to the jejunum in order to prevent a possible retroperitoneal hernia. The patient recovered.

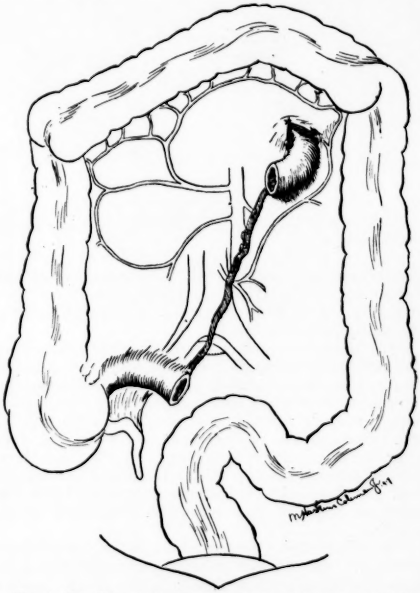


Fig. 4.—The fold cut between ligatures to relieve any constriction present. The manner of attaching the divided fold to the bowel in order to prevent a retroperitoneal hernia should be noted.

CASE 2.—On this patient, a man aged 56, I performed a gastrojejunostomy for duodenal ulcer three months previously. The roentgen ray in this case showed bismuth entering the efferent jejunum freely, as in the previous case. The emptying time of the stomach was not recorded. The jejunum in this case emerged from the mesocolon, just beneath the splenic flexure, so a left to right anastomosis was performed, and the jejunum was attached 1½ inches beyond the anastomosis, in order to prevent a kink, which was first suggested

5. Crymble: Brit. Med. Jour., Oct. 15, 1910.

by Hadra in 1891. A fairly short loop resulted, preventing a sag in the jejunum. At the second operation, for persistent vomiting, the field of operation appeared normal. There were ample stomata at the anastomosis opening into the stomach, afferent and efferent jejunum, and no kinks or dilations were seen below the mesocolon. In this case the duodenum was tremendously dilated, being four times normal and most prominent to the right of the vertebral column. The dilatation extended up to the duodenojejunal flexure, which was moderately constricted by this crescent-shaped fold in the mesocolon, as was easily determined by the finger. In this case the jejunum had been drawn sharply to the right by its attachment to the stomach. The short loop proved to be too short, kinking a moderately fixed portion of the bowel, which contained a potential angulation. The finger was carefully inserted around the duodenojejunal flexure, gently dissecting it free, and this fold in the mesocolon was divided between ligatures. This patient died of peritonitis five weeks later, following a cholecystectomy.

COMMENT

These two cases were extremely interesting, and strongly emphasized three points: 1. The negative roentgen-ray examination, as the anastomosis worked perfectly. 2. The obstruction being caused by a too rigid opening in the mesocolon, and by structures close to it. 3. The point of exit of the jejunum in Case 2 and the direction of the anastomosis rendered necessary (left to right), in order to prevent angulation.

SUMMARY

1. A gastro-enterostomy is a mechanical affair, the chemistry of the alkaline duodenal contents playing a negative rôle.

2. It must assume a double function, draining constantly and freely the gastric and also the duodenal contents into the efferent jejunum.

3. A roentgen-ray examination may disclose the anastomosis working perfectly with marked symptoms of vomiting, etc., owing to the fact that the duodenum is obstructed by the dorsal border of the mesocolon.

4. The point of origin through the mesocolon is not constant, and the anastomosis should be made accordingly in the most convenient direction.

5. Occasionally the inferior border of the transverse mesocolon forms a distinct fold over the duodenojejunal flexure which, when attached to the bowel, may form a point of obstruction, even before and also after a gastro-enterostomy is performed.

6. If this fold at the time of operation is found to be developed sufficiently to constrict the bowel, it should be divided between ligatures.

Opium, Morphin and China.—In an address by Dr. Wu Lien Teh at the National Medical Congress in Canton, China, he said that the year 1917 would be made historic because of the banishment of opium, the curse of China for seventy-five years. The ten-year agreement between Great Britain and China regarding the importation of opium expired in March. Dr. Wu, however, gave warning of the alarming increase of the importation of morphin. In 1911 it is said from Great Britain alone came 5½ tons of morphin; in 1914, 14 tons, and the estimate for 1916 was over 16 tons. In the provinces of Manchuria and Shantung the ravages of the drug are dreadful, more than half of the "jail-birds" showing signs of the needle, and thousands of professional beggars and other poor people in the northern cities becoming victims and many dying in the winter months, not from cold, but from inability to work on account of the morphin habit. The practice, first introduced by emigrants from Swatow, is increasing rapidly. The drug is put up in small packages, sometimes with fancy names, such as white powder, soothing stuff, dreamland elixir, etc.

BLADDER DISTURBANCES DUE TO NERVE LESIONS *

GILBERT SMITH, M.D.
BOSTON

The occurrence of bladder disturbances as the early or predominant symptoms of certain rather unusual nerve lesions was called to my attention by two cases, one of syringomyelia and one of multiple sclerosis. Unless the possibility of such an etiology is borne in mind, the urologist may fail to find the reason for the persistence of certain abnormal conditions in the bladder.

Search through the literature of the past four years failed to reveal more than three papers on the subject written from the urologic point of view.[1] Caulk and Greditzer[2] call attention to the relaxation of the vesical sphincter in tabes dorsalis, dementia paralytica, tumor or gumma of the spinal cord, postapoplectic conditions, exophthalmic goiter, paralysis agitans, lead poisoning, and the continuous retention catheter.

Koll[3] and Greenberg[4] have both written about the diagnosis of nerve lesions by the use of the cystoscope, but nowhere in urologic writings have I found reference to the vesical aspects of certain diseases of the nervous system. Boxwell,[5] a neurologist, has published a brief but fairly comprehensive discussion of the subject, and mentions instances of vesical disturbance in cases of myelitis, alcoholic neuritis, hemiplegia and tabes. According to the neurologists, bladder disturbances are frequent and sometimes early accompaniments of various nerve conditions which are not mentioned by urologists. It would seem probable that some of these patients are seen first by the latter, and possibly, in the course of routine treatment, escape a correct diagnosis.

The exact relationship between disturbances of the bladder function and the pathology of nerve lesions is not always clear. In fact, the physiology of the normal act of urination is not absolutely definite. Langley and Anderson[6] have shown that the bladder in cats, dogs and rabbits receives motor fibers (1) from the second to fifth lumbar nerves, the fibers passing through the inferior mesenteric ganglion and reaching the bladder by way of the hypogastric nerves, and (2) from the second and third sacral spinal nerves, reaching the bladder by way of the nervi erigentes and the hypogastric plexus. The nerve fibers from the sacral cord seem to be more actively concerned in the reflex of urination; stimulation of the lumbar fibers sets up only gentle contractions of the bladder.

The classical work of Goltz[7] in 1874 established the general principles of the vesical reflex. He pointed out that gradual distention of the bladder induced gentle contractions. These expressed several drops of urine into the posterior urethra, causing thereby a

* Read before the Section on Genito-Urinary Diseases at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

1. Since this paper was written, my attention has been called to two articles bearing on this question. Lewis, Bransford: Contra-Indications to Surgical Intervention in Obstruction at the Vesical Neck, Tr. Am. Urol. Assn., 1915, p. 274; Studies in Obscure Forms of Prostatic Obstruction and Vesical Atony, ibid., 1914, p. 13.

2. Caulk and Greditzer: Observations on the Bladder in Diseases of the Central Nervous System, Interstate Med. Jour., 1916, **23**, 36-41.

3. Koll: Study of Twenty-Five Tabetic Bladders, Surg., Gynec. and Obst., 1915, **20**.

4. Greenberg: Cystoscopy as a Diagnostic Aid in Spinal Disease, Med. Rec., New York, 1916, **90**, 634-636.

5. Boxwell: Disordered Bladder Function, in Nervous Diseases, Tr. Roy. Acad. of Med., Ireland, 1914, **32**, 63.

6. Langley and Anderson: Jour. Physiol., 1895, **19**, 71.

7. Goltz: Arch. f. d. ges. Physiol., 1874, **8**, 478.

sensory stimulation. This — the afferent part of the reflex — aroused the efferent impulse by which the bladder is made to contract vigorously and the sphincters to relax. Goltz showed that in dogs with spinal cord severed between dorsal and lumbar regions the reflex still existed, and that it persisted even when the lumbar cord was entirely destroyed. Thus it was established that the act of micturition is a reflex of a very primitive type, requiring not even a spinal center. The problem is complicated, however, by the fact that this reflex is very completely under the control of the will.

Before the bladder is anywhere near full, one can initiate the act of urination. By consciously relaxing certain perineal muscles and contracting others in the abdominal wall, one probably squeezes out the first few drops, which are sufficient to set the reflex in motion. The act then becomes automatic, unless, by a definite exertion of the will power, one closes the external sphincter and holds it shut until the contractions of the bladder have ceased. Conversely, when the bladder is overdistended, and urine squeezed into the posterior urethra sets in motion the reflex, the carrying out of the reflex can be prevented by an exercise of will power.

It is evident that the nerve mechanism of micturition is vulnerable at several points. If the roots of the sensory nerves are affected, as in tabes, the reflex arc is broken. If communication between the lower centers and the brain is interrupted, the act should theoretically become purely reflex and should be free from the inhibitive influence of the brain.

In general, disturbances of the bladder due to nerve lesions take one of several forms:

1. Those due to irritation of the sensory nerves, giving rise to frequency, urgency and hyperesthesia of the bladder neck. This occurs sometimes in tabes, in syringomyelia and in multiple sclerosis.

2. Retention, partial or complete, due to spasm of the external sphincter. Barney[8] explains this phenomenon in his careful work on tabes dorsalis. This condition occurs in other diseases besides tabes—in multiple sclerosis for example. It may be followed by dribbling from an overdistended bladder, but this is due primarily to retention.

3. True incontinence due to paralysis of the sphincters. This occurs in later tabes, in transverse myelitis of the lumbosacral region, and in syringomyelia.

4. Involuntary micturition. This may occur when the lower centers are cut off from the higher, as in trauma of the cord or in transverse myelitis, when these lesions are situated above the lumbar segments. The bladder will empty itself when the stimulus caused by increasing distention becomes sufficient.

Probably the most common disturbance of the bladder from the neurologic point of view is tabes dorsalis. This subject was worked up by Barney in 1910, and little can be added today to his thorough exposition. It would be unnecessary to take up the reader's time by a recaptiulation of the well known course of that disease.

The only extraordinary cases which I found reported were those of tabes in children, described by Barkan.[9] He speaks of a girl of 9 years with tabes and nocturnal enuresis, and says that he has seen twelve cases of tabes in children within two years.

Another lesion of the spinal cord which may cause bladder disturbance is myelitis. If the lesion occurs in the lumbar cord, according to Gowers,[10] it will cause loss of vesical reflexes which results in dribbling without retention. If above that region, the reflex is first lost, and then becomes hyperactive. In other words, there is first retention, then involuntary voiding.

Trophic disturbances in myelitis may cause ulceration of the bladder.[10]

Syringomyelia is the occurrence of a glia-lined cavity in the gray matter of the cord. The symptoms are necessarily variable, depending on the location and size of the cavity. Jelliffe and White[11] speak of the loss of sexual desire and of testicle pains which occur. They refer to analgesia of the bladder and persistent priapism as occasional symptoms. In regard to bladder disturbances, they say that these "are not the rule, although at times appearing, usually late in the disease. When appearing early, they are apt to be transitory. They may be sensory or motor, irritative or paralytic. Cystitis is not infrequent in the later stages of the disease." With the dorsolumbar type of the disease, involvement of the bladder and rectum is not infrequent, while in the sacrolumbar type, it is usually present.

A patient with syringomyelia exhibiting marked bladder symptoms entered the Massachusetts General Hospital on the genito-urinary service in October, 1916. The relation between the vesical disturbances and the nerve lesion was not perfectly clear, yet we were unable to account for the former in any other way. The patient was a woman of 30, a domestic who had had three illegitimate children. Two of them were born dead; the last one, which lived, was born five years before. The patient complained of painful, burning micturition of eight weeks' duration. Urination was followed by dribbling, tenesmus, and a desire to urinate again. The urine contained pus and colon bacilli. Cystoscopy was done under spinal anesthesia. Considerable trabeculation of the bladder wall with a distention of 6 ounces was noted. Both ureters were catheterized; a small amount of pus and a growth of colon bacilli were obtained from each. Roentgenoscopy and the Wassermann test were negative. The peculiar thing was that during her twelve days in the hospital, the patient continued to have constant severe spasms of the bladder, in spite of every kind of local treatment. Also, she had, on several separate observations, a residuum of 6 ounces.

She was seen in consultation by Drs. Taylor and Paul, who made the diagnosis of syringomyelia, because of atrophy of the small muscles of the hands and various sensory disturbances.

Multiple sclerosis, or disseminated sclerosis, is characterized by the occurrence of small patches of sclerosis in the spinal cord, or brain, or both. These patches are due to the degeneration of the included nerve tissue, which is later replaced by neuroglia. Their size varies from that of a pea to that of a walnut, and they involve the white matter primarily. Sometimes the nerve roots are affected as well.

The etiology of this condition is unknown. It occurs most often between the ages of 25 and 35 years, and although naturally the symptoms vary according to the location of the patches, the most usual symptoms are loss of muscular power in the limbs, a jerky incoordination, nystagmus, and staccato utterance. The individual is prone to outbreaks of emotion, manifested either by laughter or by tears. Babinski's sign is always

8. Barney, J. D.: The Care and Management of the Tabetic Bladder, Boston Med. and Surg. Jour., 1910, **163**, Nos. 25 and 26; 1911, **164**, No. 1.

9. Barkan, H.: Infantile and Juvenile Tabes, California State Jour. Med., 1914, **12**, 488-491.

10. Gowers: Diseases of the Nervous System, 1903, **1**, 247, 361.

11. Jelliffe and White: Diseases of the Nervous System, 1915, p. 353.

present; the absence of abdominal and epigastric reflexes is a valuable point in the diagnosis (Gowers[12]).

The importance of this disease to the urologist is suggested by the words of Collins and Baehr.[13]

> Frequently there is associated a weakness of the bladder; there is inability to hold the urine as well as usual, and there may be urinary incontinence at times. . . . Urgency is an early symptom, and is due to hypertonicity of the bladder muscle. Intense spasms of the sphincter may occur, causing retention; later in the disease, incontinence is present practically always.

Sixty-five per cent. of Collins and Baehr's cases were of the spastic type, usually accompanied by bladder disturbances. Jelliffe and White[14] say that the bladder is involved in from 75 to 80 per cent. of all cases. "The patient feels a sense of insufficiency, and has to strain to pass water. Complete paresis with incontinence is rare." The many ups and downs in the bladder symptoms are remarkable. The disease is progressive, with intervals of improvement, but care of the bladder as in tabes would seem to be indicated.

The bladder manifestations of multiple sclerosis described by these authors were reproduced with striking accuracy in the following case:

> M. C., a nurse, aged 28, was seen about one year ago. Four years before, while in training, she became "run down" and very nervous. Previously, she had always been well, except for measles. Accompanying her breakdown were bladder symptoms—great frequency and inability to hold the water. Association with insane persons led her to fear that she might have some nervous disease, so she went to the Massachusetts General Hospital and had an examination of the spinal fluid. This was normal. She returned to work and has remained at it, in spite of a sense of weakness in the legs, and what she characterized as a "weakness of the bladder." At times she wet the bed at night.
>
> She was a rather pale, tired looking girl. The pupils reacted normally. There was no Romberg; the knee jerks were normal; general examination was negative; the kidneys were not palpable; the pelvic organs were normal. The urine by catheter was hazy, revealing no sugar nor albumin. A centrifuged sediment showed some pus cells, a few red blood cells, and vast quantities of staphylococci. No tubercle bacilli were found. Roentgenoscopy was negative for stone.
>
> The bladder contained 4 ounces of residual urine, with distention of 8 ounces; the bladder wall showed a fine trabeculation; the mucous membrane was clean. The ureteral orifices were normal. Both ureters were catheterized with a flow of normal urine.
>
> Not being awake to the diagnosis, and finding the urethra abnormally red and granular, I treated her with urethral applications, sandalwood oil and bladder lavage. The residual urine remained about 4 ounces throughout July, August and September. In November, I noted that her chief trouble was fatigue in the front of the legs. The bladder symptoms improved a very little, the greatest improvement following rest from work, bromids and belladonna.
>
> The patient was very emotional, laughing one moment, crying the next. On December 22, the residuum was only 1½ ounces. In December, I sent her to Dr. George Clymer for neurologic examination. He reported that he found a positive Babinski, negative abdominal and epigastric reflexes, and positive ankle clonus—in short, that she unquestionably had multiple sclerosis.
>
> He started treatment with solution of potassium arsenite (Fowler's solution) and the application of electricity over the bladder. Whether or not as a result of this treatment, the patient showed remarkable improvement. The residuum cleared up, the urine became normal, and for two months she wet the bed only during menstruation. She has had a slight remission, but generally speaking is much better, and has started to work again.

I have reported this case at some length because it is a striking example of the vesical manifestations of multiple sclerosis. Bladder trouble was practically her only complaint, yet there was the definite background of a nervous disease which escaped detection on routine physical examination.

The presence of residual urine should have suggested at once the necessity of a more thorough nerve examination.

Syphilis of the brain and cord, whether of the diffuse type or circumscribed, as in gumma, may produce disturbances of the bladder, varying with the location and extent of the lesion.

Tuberculous meningitis may do likewise. Pearson,[15] in 1902, and Moody[16] in 1916, called attention to the fact that retention of urine coming on in a person with tuberculosis is an early symptom of an invasion of the meninges. Moody quotes four cases, all proved by necropsy, in support of this theory.

Neuritis of alcoholic origin (Boxwell) may produce incontinence, and that postdiphtheritic neuritis can result in retention, the following case will show:

> In 1909, J. K. (162960), aged 62, a laborer, was sent into the Massachusetts General Hospital from the outpatient department because he was found to have a residuum of 30 ounces. His only previous illness had been diphtheria twenty years before. At that time he had stoppage of water, and had had dribbling of urine, with pain at the beginning of urination, and he has had difficulty in starting the stream ever since. There was slight frequency at night. The reflexes were normal. The patient's general physical condition was negative except for some cardiac hypertrophy. The prostate was not enlarged nor tender. The catheter passed easily and drained 30 ounces of foul urine. He was seen by the consulting neurologists, who found evidence of nerve lesions. A cystoscopy was done by Dr. Lincoln Davis, who found nothing obstructive, and thought the bladder condition due to his diphtheria. Epididymitis set in, then pericarditis. He died, and at necropsy, the kidneys showed suppurative nephritis, the ureters and pelves were dilated, the bladder showed a thickening of the walls with fibrous induration in the region of the outer coat and much hypertrophy of the trabeculae. Between the hypertrophied trabeculae in several places, there were smooth walled diverticula, the largest being about 3 cm. in the greatest dimension. The prostate showed very slight, if any, enlargement of the lateral lobes. There was a very small eminence in the situation of the median lobe. The prostatic urethra was free and somewhat dilated.

That various forms of insanity are accompanied by disturbances of the vesical and rectal sphincter is, of course, well known; the bladder disturbances are usually late symptoms.

Not so much in them as in the field of organic nervous diseases, such as multiple sclerosis, syringomyelia and tabes, is cooperation between urologist and neurologist most necessary. The most troublesome symptom of those conditions may be vesical, and the first assistance sought by the patient may be from the urologist. It is well for the latter to have in mind the fact that a nerve lesion may be the cause of marked hyperesthesia of the bladder, characterized by great frequency, or of unexplained residual urine in cases without urethral obstruction.

12. Gowers: Diseases of the Nervous System, **2**, 543.
13. Collins and Baehr: Disseminated Multiple Sclerosis, Am. Jour. Med. Sc., 1914, **148**, 495-520.
14. Jelliffe and White: Diseases of the Nervous System, 1915, p. 379.
15. Pearson: Retention of Urine in a Patient with Tuberculous Meningitis, Clin. Jour., December, 1902.
16. Moody: Retention of Urine in the Adult, Without Known Cause, a Sign of Tuberculous Meningitis, Lancet, London, 1916, **1**, 104.

ABSTRACT OF DISCUSSION

DR. W. C. QUINBY, Boston: I think it would be of value to place along side of Dr. Smith's results those of a rather hasty investigation of cases occurring in the last four years at the Brigham Hospital in Boston, in the service of Dr. Cushing, which showed definite bladder lesions and bladder symptomatology due to various known lesions of the cord. The bladder symptoms following these various spinal cord lesions depend entirely on the location and nature of the lesion; therefore we find the greatest difference in the symptoms, as has already been pointed out by Dr. Smith. In going over the cases at the Brigham I have chosen twenty which showed definite symptomatology in the bladder. These were as follows: 1 case of transverse myelitis; 3 cases of spinal cord endothelioma; 1 case of spinal cord angioma; 1 case of metastatic sarcoma; 1 bullet wound of the cord; 12 cases of fracture of the spine; 1 case of hematomyelia without fracture of the spine.

I wish to call attention merely to the broad deductions and conclusions which one can draw from a study of these cases, without going into the details at this time.

A lesion at the proper level to cause a complete paraplegia always involves the bladder, causing a paralysis of the detrusor, with resulting retention of urine. Following this, at a later or earlier period according to the severity of the injury, there supervenes incontinence with overflow; then, later on, if the patient lives and the condition persists, true incontinence, with a greater or less degree of residual urine, is usually seen. Sooner or later infection always occurs. Sometimes it occurs with startling severity, with symptoms and signs of infection of the kidney and bladder of greater intensity than those signs from the spinal lesion, and death ensues. In other cases, however, the infection may be partly resisted by the patient, and fairly often cases occur showing a chronic cystitis and pyelitis from time to time, increasing in intensity and causing symptoms of general sepsis.

DR. BRANSFORD LEWIS, St. Louis: There is one phase of the subject of involvement of the mechanism of urination that is interesting rather more from the urologic standpoint, and I read a paper on the subject before the American Urological Association about three years ago, under the title of "Studies in Obscure Forms of Prostatic Obstruction and Vesical Atony" (Ann. Surg., March, 1915). During the last ten years or so there have appeared from time to time discussions of prostatic obstruction by very able men, like Thomson Walker of England, Albarran and others, and Germans of equal prominence, in which they spoke of cases of prostatic obstruction with what they termed unrecognizable causation. They, to their own satisfaction, excluded nervous origin and let it go at that—apparently what we used to term idiopathic, whatever that means. I discussed the subject and adduced a number of cases, and from my standpoint I could not believe there was such a thing as a retention of urine, atony and all those sequelae, without causation, and in the study of obscure forms of prostatic obstruction mentioned I declared they were due to certain physical conditions that were not recognizable according to the methods employed for diagnosis; such, for instance, as a moderate degree of contracture of the vesical neck that was not recognizable by the various methods of instrumentation, either endoscopic or cystoscopic, until one got one's finger right there and felt the contracture that until then was not recognizable.

Another form of obstruction that ought to be given more consideration, I said, was that of syphilitic influences through the spine, producing interference with the evacuation of the bladder without there being an evident tabes or any lesion that was apparent excepting on the most careful analytic study of the case. And that applied to younger individuals as well as to the old ones, and also to inherited syphilis. I spoke of one patient who had been subject to numerous surgical operations; he had had five major operations done on him, and he was only about 18 or 20 years of age when I saw him, and he had never been able to urinate with any degree of satisfaction. He had never acquired syphilis, but he did have inherited syphilis that had bestowed on him this stigma that had required all his attention all of his life. It was proved by the Wassermann and other tests, and he improved under the influence of antisyphilitic treatment.

DR. JOHN T. GERAGHTY, Baltimore: In connection with Dr. Smith's paper and Dr. Lewis' discussion, I would disagree with Dr. Lewis. I was much astonished a few years ago to find some cases of obstruction to urination for which we could find no cause. We supposed, of course, that they were probably unrecognized cases of contracture of the vesical neck. Operation to divide the vesical neck, however, gave no relief. We have had now a series of six cases of that type in which all of the clinical findings were simply those found with a spinal cord lesion; sometimes dilatation of the vesical orifice, residual urine as a rule, and all of the classical symptoms that go with the spinal cord cases that Dr. Smith has mentioned. Two of these cases have come to necropsy, and we were able to obtain a most complete necropsy, including the central nervous system, and the most careful studies of the central nervous system, and the bladder and the urinary apparatus failed to show the slightest cause for the obstruction. There is only one explanation which I can think of which will account for these cases, and that is that we will probably have to admit the possibility of a peripheral lesion; that it is possible to have a peripheral neuritis which will affect the bladder. That is hard to understand, because if there is a degeneration of the peripheral nerves, sooner or later there should be evidences of that in the spinal cord. In these cases there was nothing in the spinal cord to indicate that the nerves had been injured. Furthermore, these two patients, instead of having atrophied bladders, had hypertrophied bladders. In each instance the vesical orifice was dilated; there was no valve formation, no diaphragm.

DR. C. M. HARPSTER, Toledo, Ohio: The idea that trabeculation is one of the earliest premonitory symptoms in tabes I think is not absolutely substantiated. I should like to call attention to a very unique case the study of which it was my pleasure to take part in. This was of a man who had a fracture of the fifth and sixth cervical vertebrae. If I remember my anatomy correctly, the brachial plexus is made up of the four lower cervical and first dorsal nerves.

I was especially interested in studying the effect of this injury of the spine on his bladder phenomena. We studied this patient for about six months, and we could put him to sleep, make him cease talking and paralyze him from the neck down at will. That is, we had him in a plaster helmet and when that was removed he would immediately lapse into a paralysis of speech, a paralysis of one or both limbs and of the bladder and rectum. I repeatedly induced these phenomena; that is, when the cast was removed or replaced for investigation this patient had an incontinence of his urine. We had to catheterize him. He always had an incontinence, which was always relieved on the replacement of the cast. By making traction on his neck and chin, even if he could not speak to us, he immediately would begin to talk and move his arm, and on the removal of the pressure of the fragments of bone on the cord he could move his limbs and void his urine.

DR. LEO BUERGER, New York: I readily appreciate that the phenomena of urination are developing into an understandable quantity. If I understood Dr. Smith correctly he said that injuries to the spinal cord above the lumbar region seemingly had no effect on urination. Dr. Quinby said that a fracture of the spine had caused incontinence and other phenomena. Now, the bladder is developed from the rectum; it is a part of the same tissue. If that be true about this etiologic factor neurologically that the spinal cord does not necessarily control urination, it would bring it down to the view that it must be either due to the sympathetic or to the vasoconstrictors or the vasodilators—the vasomotor system. This becomes very interesting, because from the vasomotor system we might have any sort of a condition producing urinary symptomatology.

I had a man who had not been able to pass his urine and every sort of an examination had been made on him. He was a man of importance in his neighborhood. He could not urinate, and there was no known reason. He was the father of healthy children. He was a very healthy appearing man

and came from healthy antecedents. I played with him for about six months. At the end of that time he was riding one day in his automobile, the chauffeur was intoxicated, there was an accident in which the patient's back was injured, and he has been able to urinate ever since.

DR. MARTIN KROTOSZYNER, San Francisco: In every otherwise not explainable bladder lesion of functional character the urologist always must be on the lookout for the possibility of an underlying etiologic factor in the cerebrospinal center, the insidious onset of which may first manifest itself by bladder symptoms. A great many of these conditions are either diagnosed too late for adequate specific treatment, or, especially when occurring in men of the age of prostatism, are diagnosed and treated as lesions due to mechanical obstruction. The solution of that problem, to my mind, does not depend so much on competent neurologic counsel, which often is obtained when nerve centers are irreparably damaged, but rather lies in the acquisition on the part of the urologist of a better knowledge of neurologic diagnostic methods as the only means of establishing an early diagnosis.

DR. WILLIAM F. BRAASCH, Rochester, Minn.: The value of cystoscopic data in the early diagnosis of neurologic conditions is not generally appreciated among neurologists. The cooperation of the urologist and the neurologist is often very necessary. Whenever there is any doubt as to whether or not a patient has a central nerve lesion he should be referred to a competent urologist for cystoscopic data. In a high percentage of the cases such data are of great practical value to the neurologist. The well-known changes in the bladder following cord lesions are of two types, namely, trabeculation and dilatation of the internal sphincter. The dilatation of the internal sphincter takes place, in the majority of cases, in the later stages of nerve lesions. The first change is trabeculation, which, as you know, with a cord lesion is quite typical of a large percentage of cases. The trabeculae appear ridge-like and are confined largely to the upper portion of the bladder. Without any nerve lesion, however, patients are frequently seen with irritable bladders which on cystoscopic examination appear trabeculated similarly to nerve lesions. We cannot always, therefore, depend on the cystoscopic picture, particularly in the early stages of nerve lesion.

DR. EDWARD L. KEYES, JR., New York: One diagnostic point has been of so much value to me that I venture to bring it to the attention of this assembly. I have in only one case known a tabetic with bladder paralysis to show active ankle jerks, though a number of patients have shown normal knee jerks. Therefore, it seems wise to examine all of our prostatics for ankle jerk. There are cases in which we cannot elicit the ankle jerk and in which there is no cord lesion; nevertheless the absence of the ankle jerk will frequently put us on the right track. In one instance I remember particularly, while the neurologist was in the ward examining the man a laboratory report on the spinal fluid came in. The neurologist said that although the patient had absent ankle jerks and had loss of deep muscle sense in his calves, nevertheless he had no spine lesion. Whereupon the report was read showing characteristic tabetic changes in the spinal fluid.

DR. CHARLES W. BETHUNE, Buffalo: There is another sign which I have frequently observed in tabetic bladders; that is, a gaping of the ureter due to paralysis. Sometimes if one can turn the cystoscope in the right direction one can see a quarter to half an inch up the ureter. If a ureter catheter is introduced through the cystoscope in tabes the patient is unable to feel contact at any point within the bladder.

DR. WINFIELD AYERS, New York: I believe we can make one of the earliest diagnoses of beginning tabes in any form by examining the bladder. I recall the last case that came under my observation. The patient had been under a first-class man in New York, who had been treating him with bladder lavage for about a year. On my first observation I immediately asked him if he had had syphilis. He said he had. I tested him for the lesions commonly shown as tabetic, for instance, the pupil, knee jerk, etc. The pupil reacted perfectly, the knee jerk was increased, the ankle jerk was increased. I had a Wassermann made and it was four plus. The only symptom the patient had was a twitching. In washing his bladder his legs would twitch. I put him on a course of sodium cacodylate and all of his bladder symptoms disappeared. His jerk has not disappeared, but he is beginning to have a loss of contraction of the pupils to light, and that seems to me to indicate that he came to me in the pretabetic stage. I think that by seeing these patients early, recognizing them at once from the bladder, the possibly severer effects of tabes may be blocked off. I have not had so much experience in the other forms, but in the cases of fracture of the spine that I have seen, in almost every instance they followed out the symptoms described here.

DR. G. G. SMITH, Boston: The record in the paper of nerve lesions is very incomplete, I realize, and yet I felt from my comparatively slight study of the situation that I had learned several valuable lessons. There are a number of nervous diseases causing bladder symptoms which must be diagnosed by a consideration of something more in a patient's condition than the mere examination of knee jerks, pupils and Romberg. Unless one is quite familiar with the symptomatology of some of these nervous diseases, one is likely to overlook them. There is no reason why the urologist should not know these things, but most of us do not. I know I was entirely ignorant of the symptoms of multiple sclerosis, and I had to look up the description of syringomyelia before I knew what that was.

I think the diagnosis of nerve lesions with the cystoscope is difficult, because, as Dr. Braasch pointed out, the bladder manifestations are necessarily limited; we have practically only three things: first, hyperesthesia; second, retention; third, relaxation of the sphincter, with perhaps dribbling. Dribbling may be caused by any one of a number of different nerve lesions, and these different nerve lesions are not always easy to reconcile with the pathology of the disease.

Dr. Geraghty spoke of unexplained bladder disturbances and said that they might be caused by a peripheral neuritis. I would simply say in connection with that that I did have one such case, one of postdiphtheritic paralysis, in which a postmortem examination of the spinal cord was not made, but in which apparently a peripheral neuritis limited to the bladder was the thing that was causing the symptoms.

In regard to Dr. Buerger's remark that I had said injuries above the lumbar cord did not cause symptoms, I think he did not quite understand what I said. I said that injuries of the cord above the lumbar region would allow the reflex to go on, but if the lower centers were cut off from the brain the patient would not be able to stop the act of urination. It is a fact, however, that complete section of the cord is followed by retention of urine at first, although theoretically it should have no effect on the act of urination.

Work of Rockefeller Foundation in China.—The China Medical Board of the Rockefeller Foundation has made its annual report describing the preliminary steps which have been taken in Chinese cities to "promote the development of a comprehensive and efficient system of medicine in China." The main plan of the board is to establish in Peking and Shanghai medical schools which shall be of the same grade as the better medical schools of this country, but the creation of these institutions has been delayed by the failure of Chinese schools to turn out students sufficiently well grounded in science and general education to take advantage of these courses in medicine. Hence, the first step has been to open in Peking a premedical school. The board has granted $150,000 to the Tsinafu Union Medical College, which has been cooperating in furnishing the necessary preliminary training to Chinese students. Until the medical school is built by the China Medical Board its work will be carried on by the school and laboratories of the Chinese Red Cross Society. This plant was operated by the Harvard Medical School of China until July, 1916, when it was taken over by the Rockefeller Foundation. While preparing for the founding of these two medical colleges, the foundation extends medical help through various missionary societies.

DIARRHEAS ACCOMPANYING GASTRIC ACHYLIA*

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PHILADELPHIA

In the study of the diarrheas accompanying gastric achylia, it is essential that we have a rational conception of that condition. It is my intention in this paper to consider first some studies which we have carried out on achylia and then to follow it by our observations on the form of diarrhea accompanying that condition. In a former contribution, I pointed out the fact that by means of fractional analysis, it was possible to throw considerable light on certain phases of achylia and to make two broad distinctions, namely, a differentiation between true and false, or spurious, achylia, the former being a condition which persists throughout the entire stage of gastric digestion, the latter being simply a form of delayed gastric secretion, to study to definitely attach a cause, the removal of which resulted in a disappearance of the gastric condition. The following cases to my mind represent at least a close association of the disappearance of a causative agent with the clearing up of a gastric condition. Apparently, it can come from fright or nerve inhibition (Case 1, student), through severe blood dyscrasias (Case Wa), through direct infection in the gastric wall (Cases Si, Ka, Du, H., K., D., T.), through a ductless gland disturbance (Case K.), besides the chronic forms of inflammation of the stomach (Cases Hi., and Mrs. H.). At least in the cases cited there is an association between improvement in the gastric condition and a disappearance of the cause.

The studies that have been carried on in the department of physiologic chemistry under the direction of Drs. Hawk, Bergeim, Fishback, Fowler, Smith and myself seem to indicate that there are many important points regarding the human gastric secretion that have not been sufficiently emphasized. In the first

TABLE 1.—EXPERIMENT WITH 0.2 PER CENT. HYDROCHLORIC ACID, 30 C.C. "REPEATED"

No.	Time	Vol.	Character	Total	Sahli	NH_3	Pep
Resid.		24	Mucus-like; opalescent; colorless	2.0	0.0	5.0	
1	9:17	4	Liq. fairly turb. L. yel. (regurg)	26.5	22.5	3.0	0.5
2	9:22	3	Liq. fairly turb. L. yel. (regurg)	17.5	13.5	4.0	
3	9:27	4	Liq. fairly turb. L. yel. (regurg)	11.5	5.5	4.5	0.1
4	9:32	2	Empty mostly mucus L. yel.	9.0	....	6.0	
Give	9:36	30	0.2 per cent. hydrochloric acid	53.5	53.0	0.0	
5	9:41	4	Clear v. sl. yel. (regurg)	34.5	32.5	3.0	0.5
6	9:46	5	0.1 muc. up v. sl. turb. yel.	29.5	25.0	3.5	1.0
7	9:51	5	0.1 muc. up v. sl. turb. yel.	25.0	20.5	4.0	1.0
8	9:56	2	Empty 14 mucus up turb. yel.	18.5	....	5.0	
Give	9:59	30	0.2 per cent. hydrochloric acid	53.5	53.0	0.0	
9	10:04	3	Clear colorless	37.0	34.5	3.0	1.0
10	10:09	5	0.5 Muc. sl. turb. L. yel. (regurg)	31.0	26.0	4.5	1.75
Lavage		80	V. sl. turb. sl. yel	1.5			

TABLE 2.—EXPERIMENT WITH SODIUM BICARBONATE, 0.5 PER CENT. "REPEATED"

No.	Time	Vol.	Character	Total	Sahli	NH_3	Alk.
Resid.	9:13	18	Mostly muc. colorless opalescent	2.0	0.0	5.0	44.5
1	9:28	5	Clear colorless, tr. muc.	....	....	...	44.5
2	9:33	4	Clear colorless, tr. muc.	....	....	...	45.5
3	9:38	5	Clear colorless, tr. muc.	....	....	...	45.5
4	9:43	5	Clear colorless, tr. muc.	....	....	...	44.0
5	9:48	3	Empty colorless v. sl. yel (regurg)	....	....	...	43.5
Give	9:51	30	0.5 per cent. sod. bicarb. 15 degrees C.	....	....	...	64.5
6	9:56	5	0.2 down muc. Liq. clear deep yel.	....	....	...	47.5
7	10:01	4	0.2 down muc. Liq. clear deep yel.	....	....	...	44.5
8	10:06	5	Flakes of muc. yellow	....	....	...	43.5
9	10:11	4	Flakes of muc. yellow	....	....	...	43.5
10	10:16	5	Flakes of muc. yellow	....	....	...	41.5
11	10:21	4	Flakes of muc. yellow	....	....	...	40.5
Give	10:24	30	0.5 per cent. sod. bicarb. 15 degrees C.	....	....	...	46.0
12	10:29	5	0.1 down muc. liq. clear colorless	....	....	...	46.0
13	10:34	6	0.2 up muc. liq. sl. turb. L. yellow	....	....	...	46.5
14	10:39	5	Flakes of muc. yel.	....	....	...	43.5
15	10:44		Empty; no sample				

since after a period of one hour and a half there is to be found a perceptible secretion. If this method had been employed in previous studies of this subject, the number of true achylias recorded would be very much less. This does not alter the fact, however, that these spurious forms of achylia are likewise accompanied by diarrhea in a certain proportion of cases. The second distinction which was brought out in that paper was the differentiation between psychic achylia embracing a suppression of the first stage, and a chemical suppression which for the want of a better name we called chemical achylia. These are both spurious or false achylias, since there is not a total suppression of secretion.

I wish to present some cases illustrating different phases in the mechanism of achylia. I am aware that gastric achylia is associated with many toxic, infectious, nervous and vascular disturbances, but I have attempted in the limited number that I have been able place, in a series of studies on the psychic secretion in normal untraumatized persons, we were able to demonstrate a very pronounced psychic secretion lasting from sixty to eighty minutes (from 105 to 274 c.c., averaging 122 T. A.; from 74 to 114.5 c.c., averaging 97.3). Atropin reduced this secretion approximately two thirds as to both its quantity and its acidity, showing that even during this secretion there is probably initiated a chemical mechanism uncontrolled by atropin. On the other hand, there are persons in whom this secretion does not occur, and in a large series of persons subjected to several thousand fractional analyses (Carlson, Schmidt and others) in order to ascertain the action of the various foodstuffs in the stomach, we came across several perfectly healthy persons who presented a total and persistent gastric achylia.

On one of these persons we made a series of studies. This person was found to have a persistent achylia regardless of the type of food administered. An Ewald meal, toast, beef, beef extract with salt and pepper, were all incapable of inducing any acidity or any peptic activity. We therefore gave this person

* From the Jefferson Medical College.
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dilute hydrochloric acid on one occasion and sodium bicarbonate on another occasion. In both instances, although the substances were markedly different, the person poured out, or rather secreted, a fluid that served as a diluting agent, but possessed apparently none of the ordinary characteristics of the gastric secretion. In other words, it is probable that, even in achylia, there is poured out a secretion that, while not acid and not containing pepsinogen or renninogen, nevertheless might be capable of activating the intestinal secretion. Whether this occurs in pathologic cases, I cannot say, but we feel that our ordinary chemical methods did not develop the possibilities in this secretion. Experimentally, we found that it was possible to produce a marked delay in the appearance of the secretion by means of concentrated solutions of glucose and salt. Furthermore, it is possible by intermittent neutralization and feeding to produce a total anachlorhydria over long periods of time, as we learned from studies that we made in connection with ulcer treatment.

All these observations bring us down to the diarrheas accompanying achylia. In considering this subject we must realize these important points: 1. Approximately only 30 per cent. of patients with achylia present diarrhea, for many in my experience and (*b*) even inflammation of the intestine or infection; (2) the association of a similar disturbance in the secretions of other organs, such as the pancreas, and (3) a removal of inhibition of fermentative changes in the bowel (normally controlled by gastric hydrochloric acid) resulting in a form of fermentative catarrh of the bowel.

I have attempted to study, from all these angles, those cases in which there was looseness of the bowels or diarrhea, and it seems to me that the following statements are justifiable: It is hardly likely, with the exception of profoundly heightened nerve irritability, that increased gastric peristalsis is alone responsible for the appearance of diarrhea, since I have frequently injected improperly digested material into the duodenum through the duodenal tube without inducing looseness of the bowels. I have even injected irritants such as silver nitrate and iodin into the duodenum without inducing diarrhea. It is my belief that any acceleration of gastric peristalsis induced simply by rapid evacuation is lost in the small bowel and has little to do with, or at least does not control, the movements of the colon. Irritating material as long as it remains irritating might, however, induce hyperperistalsis, but even partially digested or undigested fibrin or connective tissue, when introduced into the small

TABLE 3.—EXPERIMENT WITH ROAST BEEF, MEDIUM AND WELL DONE, COLD, 100 GM.

No.	Time	C.C.	Character	Total	HCl	NH_2
1	9:26	5	Mostly muc. few coarse fine Liq	3.5	0.0	7.0
2	9:41	5	Hom. f. & course. muc. little fl.	12.0	...	16.5
3	9:56	5	Hom. f. & course, muc. little fl.	14.0	...	19.0
4	10:11	4	Hom. muc. & meat decidedly red *blood*	13.0	...	16.5
5	10:26	3	Muc. w. tr. meat red (blood)	11.0	...	14.0
Lav.		62		3.5		

TABLE 4.—EXPERIMENT WITH ONE-FOURTH TEASPOONFUL BEEF EXTRACT, 250 C.C. WATER, SALT AND PEPPER, 50 C.*

No.	Time	C.C.	Character	Total	HCl	NH_2	Pep
1	8:44	4	Clear l. yel.	7.0	0.0	7.0	0.0
2	8:59	4	Clear l. yel.	6.5	0.0	7.5	0.0
3	9:14	7	Clear sl. l. yel. tr. muc.	6.5	0.0	8.0	0.0
4	9:29	7	Sl. turb. v. l. yel., lot muc.	7.0	0.0	7.0	0.0
5	9:44	5	Sl. turb. v. l. yel., lot muc.	8.5	0.0	7.0	0.0
6	9:54	1	Clear v. l. yel. brown	8.0	...	6.0	0.0
Lav.		88	Clear colorless con. muc.	2.0			

*Pepsins incubated 24 hours.

show constipation, and a large percentage show merely a tendency toward looseness of the bowels on slight provocation. 2. The incidence of diarrhea is almost as great in subacidities. 3. There can be no question that a simple total achylia alone is by no means followed by diarrhea. In the foregoing studies none of the experimentally induced delays were followed by looseness of the bowels, and in the instances observed among normal persons there was no diarrhea. We must therefore look not in the stomach, but elsewhere for an explanation of this phenomenon. The points which impress me in gastrogenous diarrhea are:

1. The apparently acute onset in many of the cases, ushered in frequently by signs of infection, not infrequently by some systemic disturbances.

2. The intermittence in the appearance of the symptoms. Many of these cases showed a marked intermission punctuated by simultaneous disturbances elsewhere.

3. The frequent association of evidence of inflammatory condition of the small bowel rather than simply exaggerated peristalsis as revealed by fecal study.

We have been told that the causative factors in gastrogenous diarrhea are: (1) gastric hypermotility resulting in too rapid evacuation of insufficiently digested material from the stomach, which results in (*a*) irritation and exalted small intestinal peristalsis, bowel, is incapable of producing this effect. In other words, intestinal compensation is the normal safeguard, and must be considered in any explanation for regular or even delayed bowel action in over half the cases of achylia. On the other hand, ruptured intestinal compensation, either through a primary weakness in the intestinal mechanism or a secondarily induced inflammation or infection, is, I believe, in most instances responsible for gastrogenous diarrhea.

I have been on the lookout for these cases for a long time, and in practically each case of unquestioned achylia in which there was looseness of the bowels, or even fifteen to twenty movements a day, there was associated with the condition certain other factors which more or less explain the condition. For instance, psychic disturbances were nearly always responsible for diarrhea (Potter's). On several occasions one patient had protracted periods associated, or rather ushered in, with signs of intestinal infection. In other cases (Simpson, Hirsch and Kane) the diarrhea came at intervals, nearly always associated with an unquestioned enteritis, an achylous gastro-enteritis. Mr. H. practically always developed diarrhea after the eating of certain kinds of food, particularly fish. Whether this was anaphylactic or not, I am not prepared to state. On four separate occasions covering a duration of several months, he was found to have a most per-

sistent achylia. On three occasions he developed a diarrhea. At one time there were signs of cholecystitis, at another time unquestioned angiocholitis with slight jaundice, and in all cases there was a general enteritis. The connective tissue lientery, alone supposedly characteristic of achylia, is to my way of thinking rare. Nearly always the fecal formula will include evidences of small bowel infection, intimately mixed mucus, not infrequently biliverdin, and often poor fat digestion and deficient cellulose consumption. But rarely are there associated signs of pancreatic disturbance. In only one case could I find the two associated, and in that case duodenal intubation revealed a secretion simply giving the reactions for amylase, while the fecal studies showed deficiency in the digestion of all the foodstuffs. This patient, however, had chronic diffuse nephritis, and has since showed improvement in her gastric secretion as well as her ability to handle food. The diarrhea in gastric achylia may be of four types:

1. The first type comprises simply loose pasty movements containing little or no mucus, but undigested meat and connective tissue. Meat fibers are in clumps, but partially digested fibers are seen.

2. The second type is marked by watery movements with the above morphology and undigested cellulose; bile is converted; fats split are often unabsorbed.

3. The third type consists of either of the foregoing with excessive mucus. The mucus may contain excessive leukocytes or not.

4. The fourth, a greasy type, comprises two forms, one greasy, consisting of split fats and connective tissue and meat fibers, and a second in which an enormous amount of neutral fats predominate over normal often undigested starches.

The first and second are the so-called typical types of achylous diarrhea, the second being due to the excessive irritability of the undigested food. Type 3 is the type usually seen with putrefaction in infected gastritis, in gastric carcinoma, and in the gastro-intestinal catarrhs. Type 4 in both forms is seen with the association of the biliary and pancreatic syndrome.

The difficult point for me to establish is, just how far the diarrheas are due simply to secretory loss and how far to infection and to irritation. Only in a certain proportion of cases do small doses of dilute hydrochloric acid correct the condition. In Type 4, hydrochloric acid is without effect, and the substitution of a fat-free or a low fat diet removing irritating fatty acids produces much better results. In Type 3 hydrochloric acid is without effect, in many instances, while in clean-cut cases of Types 1 and 2 it often works magically, but not so magically as I have been lead to believe.

A careful study of these achylia cases reveals many factors at work besides a simple reduction in secretion. In the majority of cases the achylia is secondary. In many there is the vicarious elimination of toxins of extragastric origin. Cultures of the duodenal, pancreatic and biliary secretions are in many instances positive. Not infrequently *Bacillus coli* infections are to be blamed for the trouble, at least, in three cases. Evidences of inflammation of the duodenal mucous membrane can be shown in some instances. A curious paradoxical effect of hydrochloric acid is that very small doses may cure, and overdoses may induce the trouble, the explanation, according to our experiments, being that a small dose delays gastric peristalsis, and a large dose may, by going into the intestinal tract, temporarily induce irritation.

TABLE 5.—RATE OF EVACUATION OF YEAST; ORANGE JUICE (1-3), 15 GM. YEAST*

No.	Time	Inter.	Vol.	Procedure and Character	Count	Total	HCl	NH_3
Resid.	9:15		20					
Lav.	9:20		96					
L2	9:25	5	0					
....	9:30		200	Orange juice yeast 15 degrees C..	656,000			
1	9:47	15	192	Empty	.....	43.0	22.5	4.5
E1	10:02	15	15	Empty	.....	22.0	8.5	6.0
E2	10:09	5	5	Be sure empty	.....	28.5	....	11.5
....	10:12	..	200	Orange juice yeast 15 degrees C..				
2	10:57	15	4	Empty				
E.	11:13	15	0	Empty				
E4	.....	5	...	Be sure empty not taken.....				
....	11:24	..	200	Orange juice yeast 15 degrees C..				
3	11:54	30	150	Empty	.....	37.0	23.0	3.0
*Orange juice (analysis) 0.5 per cent urea.....					.....	64.5	24.0	8.5

TABLE 6—TOAST, 35 GM.; DISTILLED WATER, 250 C.C.

No.	Time	C.C.	Character	Total	HCl	NH_3
1	8:59	..	No sample, diff. tak. tube.....			
2	9:14	5	Tr. solids mostly	5.0	...	3.0
3	9:29	5	0.4 down l. f. liq. tur. white	6.0	0.0	4.5
4	9:44	5	0.8 down f. f. liq. f. tur. white	12.0	2.0	4.5
5	9:59	8	0.8 down f. f. liq. tur. white	10.0	1.0	5.0
6	10:14	6	0.8 down f. f. liq. sl. turbid	10.0	1.5	5.0
7	10:29	2	Tr. down f. f. liq. clear, colorless	7.0	...	3.0
Lav.	.....	88	No sol. clear, colorless.....	2.0		

On account of the great number of cases of true achylia without diarrhea that I have seen, it is my belief that in those cases in which it occurs, the probable explanation is that owing to a lack of secretion the small intestinal tract becomes either infected or irritated, in which case rapid peristalsis results in diarrhea. The more pronounced the infection or the irritation, the more pronounced the diarrhea, and the same mechanism that induced achylia may induce hyperirritability of the entire gastro-intestinal tract. This is surely the mechanism in those cases accompanied by frequent mucoid stools. What is the explanation of gastric achylia and gastric hyperperistalsis without diarrhea? The inference to my mind in these cases is, that there has been either a previously existing constipation or that the initial impulse is outweighed by compensatory intestinal digestion. Another point of importance which seems to be lost sight of is the absence of fecal findings of achylia in some bona fide cases of gastric achylia. Here again, in spite of the fact that the specific rôle of gastric digestion is to digest connective tissue, a vicarious digestion occurs in the intestine which leaves in the movement little or no evidence of the gastric achylia. This is the exception rather than the rule, but I have seen some cases in which there are unquestioned evidences of such

findings. In other words, there are two broad general groups, a clean-cut achylia and the achylia due to carcinoma, catarrh, gastritis, etc., on the one hand, and over against this group, achylia with a clean-cut diarrhea furnishing evidence alone of perverted gastric function, as contrasted with diarrhea due to a multitude of causes, gastric, hepatic, pancreatic, intestinal. Hydrochloric acid gives the best results in the first group.

The administration of hydrochloric acid in some form is a time honored procedure in the treatment of gastric achylia and in the diarrheas of achylia. Let us see the action of hydrochloric acid in the stomach. Apparently a small amount has little effect on normal digestion, while large excessive amounts, excessive so far as the optimal acidity is concerned, are rapidly neutralized or brought down to optimum by the *verdünnungssaft*, or regurgitant pancreatic secretion. The manner in which hydrochloric acid operates in the achylia stomach may be seen from its use in the following cases:

It is astonishing that in pellagra and in certain forms of purpura there seems to be an achylia, often accompanied by an infected gastritis, which disappears with the gastric infection if the administration of dilute hydrocholic acid is kept up for a sufficiently long time. This is also seen in the subacid infected stomachs of the tuberculous, and especially in those cases of infected diarrhea with achylia. The following

TABLE 7.—EXPERIMENTS ON A NORMAL INDIVIDUAL WITH ACHYLIA GASTRICA

21.0	250 c.c.
....	
14.5	
18.0	
....	
31.0	200 c.c.
33.0	
....	
85.0	
87.0	

method seems to produce good permanent results: Insert the fractional tube and perform lavage, and if need be disinfection; then on the empty stomach introduce at fifteen or thirty minute intervals through the tube from 15 to 20 minims of dilute hydrochloric acid, largely diluted with water, or better still, as I have done, 2 ounces of 0.25 per cent. hydrochloric acid. Keep this up for several hours, and after several treatments (which may be done by the nurse) have the patient eat a full meal, and with the last liquid taken swallow the fractional tube, and then give fractional installations of the 0.25 per cent. artificial acid. A rapid change occurs in many cases, not in all, and in some cases the results in the improvement of appetite and gastric function are remarkable. Another point — in those achylias in which the difficulty in fixing the etiology becomes acute, the administration of parathyroid extract is indicated, on the principle of the stimulatory action of the aparathyroid secretion. I have had two such cases.

CONCLUSIONS

1. Gastric achylia may be due to a number of different etiologic factors inducing in each instance presumably a different type of the disturbance. Instances of psychic, infected, anemic and ductless gland types are given.

2. Studies on achylia seem to indicate that either the entire cycle of gastric digestion, or only certain phases, are affected, which enables us to make a differentiation in types.

3. Achylia may be found in apparently normal persons, and studies in one such case indicate that there is a secretion formed without enzymes or acidity, but probably possessing other properties which as yet are not clear.

4. Artificially delayed secretion and induced achylia, as well as the normal types observed, were all unaccompanied by diarrhea.

5. The injection of partially digested material, or even irritants, into the duodenum fails to induce diarrhea.

6. In the so-called gastrogenous diarrheas the cause is to be found in an associated condition besides achylia, namely, an enteritis most frequently, or if not an enteritis, it is, in all probability, due to a disappearance of the normal protective barrier of the gastric hydrochloric acid. The lack of the acid alone, however, seems insufficient as an explanation of the cause.

7. Implantation of an intestinal infection, or possibly a common cause, inducing both achylia and enteritis, may be responsible.

8. In only one case was it possible to discover an associated pancreatic disturbance.

9. A method of fractional and continuous administration of hydrochloric acid is given as a new method in the treatment of this condition.

1934 Chestnut Street.

ABSTRACT OF DISCUSSION

DR. CHARLES D. AARON, Detroit: When gastric secretion is deficient the first physiologic derangement that follows is in the chemical transformation of the food; the prime requisite, therefore, is the administration of comminuted food which makes the least demand on gastric digestion. Knowing that gastric juice is the only digestive secretion capable of dissolving raw connective tissue, it is advisable to forbid raw, parboiled or smoked meat. Even with adequate mechanical division, the insoluble connective tissue of such food burdens the intestine with waste material, which may either directly or indirectly prove extremely irritating, with consequent diarrhea. In achylia diarrhea, hydrochloric acid, the stimulator of trypsin secretion, is absent; pancreatic digestion is inadequate and the feces are apt to contain microscopic meat remnants, not connective tissue only. Therefore, meat should be given in restricted quantities. Vegetables and fruit should also be given sparingly, on account of the irritation likely to follow from the cellulose they contain. It is necessary to boil thoroughly all vegetable food.

As to the disturbances from the intestinal indigestion, there is practically only the diarrhea to be considered, the ultimate cause of which is, in all probability, an insufficient digestion of the cellulose. It follows that in diarrhea the dominant principle should be complete elimination of cellulose from the food. According to my experience, the articles of diet which can be ingested with increasingly less and less impunity in this condition are, in the order named, sugar, finest wheat meal, rice meal, arrowroot, grits, zwieback or toast, sago, spaghetti, rice, white bread. Potato starch is always poorly assimilated, and mashed potatoes agree with scarcely any of these patients. The artificial carbohydrates constitute a very suitable article of diet, the starch they contain being more or less dextrinized. As long as putrefaction of the intestinal contents continues, sweet milk is unsuitable and apt to cause diarrhea.

DR. ALBERT F. R. ANDRESEN, Brooklyn: At the Brooklyn Hospital we have made fractional examination of gastric contents by the Rehfuss method in about 500 cases of gastrointestinal disorders. Of these cases, fifty-two showed a true achylia, including eight carcinoma cases. The "false achylias," that is, cases showing no free hydrochloric acid at

the three-quarter hour point, but a subsequent rise, numbered twenty-five, so that we should have had nearly 50 per cent. more cases if only the regular single removal at the three-quarter hour interval had been made. Some of these "false" cases showed a free hydrochloric acid index as high as 70 during the latter part of the two-hour period, being really delayed hyperacidities. All true achylias showed a marked hypermotility, the stomach being empty at or before the two-hour point in over 80 per cent. of my cases.

Diarrhea occurred in 24 per cent. of my fifty-two cases, constipation in 67 per cent., regular bowels in 9 per cent. The diarrhea cases were nearly all associated with infections elsewhere, and were probably infectious in origin. I feel that achylia gastrica itself is merely a name given to a symptom of an infection of the gastric mucosa, an endogastritis, as it were, secondary to a focus of infection elsewhere in the body. I found blood in the stomach contents in over 90 per cent. of my cases, and in the stools in 67 per cent. Vomiting occurred in 38 per cent. The loss of weight averaged over 30 pounds.

As for treatment, it is remarkable how quickly the use of dilute hydrochloric acid, even in small doses, will affect certain symptoms, notably the diarrhea and the epigastric pain. I think this effect is distinct from the benefit to be obtained from the other, and perhaps more important, part of the treatment, the dietetic, which has already been so ably discussed. The occasional diarrhea following the feeding of milk can usually be overcome by acidifying the milk—a teaspoonful of dilute hydrochloric acid to a glass of milk, added just before drinking.

Dr. Max Einhorn, New York: A great many physicians think or speak of diarrhea as being associated with achylia, but I always maintain that the larger group of cases is accompanied by constipation. We have those cases also in which diarrhea alternates with constipation, and again a group in which diarrhea is present. Achylia can also exist together with other conditions in organisms which do not manifest any symptoms at all, with the patient in apparent perfect health. In one of my first papers on the subject I mentioned the case of a patient who had had this condition for forty years and did not know he had any stomach trouble, nor did I, and I discovered the achylia only accidentally.

With regard to the division into achylia and spurious achylia, I think those cases in which some secretion appears later are not real achylia but cases of subacidity in which a little ferment is found that ultimately increases. Dr. Rehfuss mentioned that we may have a condition in which no gastric ferments can be detected—no pepsin, no hydrochloric acid—and still there may be something oozing from the mechanism. I would subscribe to that. In fact, I have described such a condition (hydrorrhoea gastrica), finding it principally in instances of cirrhosis of the liver accompanied by pyloric obstruction. I took this to mean that there is too much fluid in the blood vessels and a kind of pressure relief by exudation through the gastric walls. That may be a different type, but I am sure in ordinary achylia there may be something oozing from the mucous membrane, although the glands are not active. This is a matter difficult to decide.

In regard to the treatment, Ewald and a great many other clinicians lay much stress on the value of hydrochloric acid in the treatment of achylia, but personally I do not ascribe so much importance to that medication. In the majority of my patients with true achylia, where there is no secretion, I may give it for a short while, but on the whole they go along for years without a drop of hydrochloric acid, and just as well.

Dr. Louis Lefrak, New York: The term achylia gastrica is a comparatively recent addition to medical nomenclature. Friedenwald, in Osler's "Modern Medicine," gives Einhorn the credit of having been the first to use the term in conditions in which there was an absence of gastric secretion. I believe that, with the exception of secondary achylias, the condition in a majority of cases is simply one of chronic gastritis with atrophy of the secretory glands. This contention is borne out by the following observations made in the gastro-intestinal clinic with which I am connected and, to a lesser extent, in my private practice: It usually occurs in patients over 30; its incidence is almost equal in both sexes; often there is no other evidence of neurasthenia. This opinion is also held by Dr. Cheney in his paper published in The Journal, May 19, 1917.

I believe if we had a clearer conception of its pathology, achylia gastrica would be classed as a symptom of chronic gastritis instead of a clinical entity; that is, as an organic disease instead of a functional disease. It can readily be seen that if this statement has any value it must affect the treatment considerably.

Dr. Seymour Basch, New York: Achylia gastrica has always been one of the unsolved problems in gastro-enterology and I fear it will remain so for some time. This is illustrated by the fact that patients who come to us for other conditions, feeling well and looking well, on analysis are discovered to have an absence of hydrochloric acid. On the other hand, we have patients coming to us with all the clinical signs, often showing associated diarrhea with loss of weight, etc., and they are treated for a while and then leave our hands; years afterward we find that they are well without any treatment whatever. There are deeper problems than those which appear on the surface. One has been brought out and solved by Dr. Rehfuss in dividing achylia into two groups—psychic and chemical. I think that is an important addition. Another point which will have to be solved is with reference to the protective fluids of the stomach in achylia. To illustrate: In hyperacidity we have antipepsin. Perhaps there is some protective ferment or fluid which protects the patients in an unknown way. It is only by definite study that we will be enabled to solve some of these problems.

The clinical value of achylia studies comes out in the differentiation between true achylia and achylia which is associated with other conditions such as carcinoma, or achylia as a reflex condition, etc., where we cannot talk of achylia merely as a clinical entity, but as a complication, as Dr. Rehfuss has said. I failed to hear any mention made in this differentiation between true achylia and achylia associated with neoplasms. Some years ago Dr. Steel tabulated a number of cases and found that in patients with chronic appendicitis, where undigested meat had been found in the stools, the intestinal condition cleared up entirely after operation. I myself have seen a case of achylia associated with hernia in which, also, the achylia cleared up after operation.

Another form, which is rare and often overlooked, has been pointed out, and that is the achylia associated with benign tumors of the stomach. We are apt to think that this is infrequent, but investigation will show that it is not as infrequent as we believe.

Dr. J. W. Weinstein, New York: Dr. Rehfuss omitted to point out that achylia gastrica is often not achylia gastrica, but is often chronic atrophic gastritis; it is often a carcinoma of the stomach; in the more exceptional cases, perhaps, achylia gastrica has a neurotic basis; and then there is achylia gastrica as such.

Dr. Rehfuss spoke of spurious achylia. I find that spurious achylia is very common in the practice of those whose experience is limited. Of course, that remark does not refer to Dr. Rehfuss, whose experience is extensive. I find that my assistants at the clinic, before they have had a large experience, meet with a large number of cases of achylia, but that after their experience has been augmented, the number of achylia cases becomes much smaller. What is the reason? It is this: There is a certain time only when stomach contents should be extracted. I am not speaking of the fractional method which Dr. Rehfuss is using, but that method which the majority of the profession is using. It is necessary to take out the stomach contents at the height of digestion; for the ordinary test meal it is fifty minutes. It is also necessary that the patient take a full meal, because if the patient takes but one half or one quarter of the meal, one is likely to get achylia, since at the end of digestion the secretion declines. Moreover, we have other factors to consider—the secretion of the saliva which neutralizes the acid, and also regurgitation of intestinal juice.

As to the treatment, I agree with Dr. Einhorn that treatment by means of acid is not very successful. It is true

that in some cases it is very successful, and it is worth while in every case to give the patient some hydrochloric acid. I make it my rule always, however, to tell patients that this is only an experiment, that it may decidedly disagree with them, for it is very unpleasant after going through tests and examinations and giving them diet and medication to hear patients say that they feel much worse than they ever felt before. It is unquestionably common to hear this from patients if hydrochloric acid is administered. I find it is especially contraindicated and not tolerated in those cases in which there is true achylia, where there is no secretion at all. It seems that the mucous membrane acquires a hyperesthesia toward hydrochloric acid, and they feel worse than ever if it is administered in these cases.

DR. I. O. PALEFSKI, New York: I agree with Dr. Einhorn that the so-called "spurious achylia" mentioned by Dr. Rehfuss in his paper is probably one of the forms of subacidity which tardily respond to stimulation by an Ewald test meal. The presence or absence of mucus should serve as a basis of differentiation between these conditions and achylia. The trained eye will readily recognize the existence of achylia by mere inspection of the characteristic two-layer test meal, the rapidly settling lower layer consisting of the undigested food and the superimposed, clear, colorless liquid layer, devoid of mucus and free acid. In pyloric regurgitation caused by transient relaxation of the pylorus, the regurgitated alkaline duodenal contents will not only neutralize the acids but will also dissolve the mucus in the gastric contents. It is impossible, therefore, to differentiate between this condition and achylia unless the examination be prolonged, as Dr. Rehfuss did, or, even better, be repeated on the following day, when normal gastric findings may be obtained.

I rely on clinical observation in declaring that the association of achylia and chronic pancreatitis is not an infrequent occurrence. This should be suspected in achylia with a history of loss of weight and the presence of anemia. Dr. Aaron justly emphasized the value of Schmidt's functional test diet as a control of pancreatic digestive power in achylia. Owing to the disturbing elements present in the examination of feces, however, the quantitative analysis of the pancreatic enzymes in the fresh duodenal contents is preferable.

Clinically, one readily observes the beneficial effects of hydrochloric acid in achylia. This I am inclined to attribute, in no small degree, to its controling effect on the pylorus. The stomach empties rapidly in achylia, due to the relaxation of the pylorus. This allows insufficiently liquefied and improperly subdivided food to enter the intestines, which serves as an intestinal irritant and causes abdominal cramps and diarrhea. Conversely, the administration of hydrochloric acid increases the tonicity of the pylorus, thus prolonging the stay of the ingested food in the stomach, where it undergoes a more thorough subdivision prior to its entrance into the intestines.

DR. HARRIS WEINSTEIN, New York: I have no doubt that in time Dr. Rehfuss may clear up various etiologic factors of achylia. We know that achylia may be either functional or organic. Functional achylia appears in conditions in which all the functions of the system are more or less depressed, as in chronic infectious diseases, anemias, particularly pernicious anemia, circulatory disturbances, nephritis, etc. In tuberculosis we find that the disease induces more or less progressive reduction in both the motor and secretory functions of the stomach. Dr. Rehfuss analyzes these conditions, and he may be able to throw more light on them in time, particularly as to the effect of the hormonopoietic system on the nervous system and its resulting effect on the secretory condition of the stomach.

As to the effect of hydrochloric acid in achylia, nobody believes that a small quantity, or even large quantities, of hydrochloric acid can have any telling effect on digestion. I do not believe anybody gives it with that aim. We give it as an activator of the pancreatic pro-enzymes, and in this manner it probably takes the strain off the intestines in so far as it causes better digestion in the intestine. Achylia may run along (in fact, 40 per cent. of the cases do run along) with no symptoms at all, and achylia, if it is not due to chronic gastritis or a malignant condition of the stomach, does not become evident unless pancreatic digestion breaks down. Dr. Rehfuss injected some irritating substance into the duodenum and did not get any diarrhea. We must not forget that achylia does not mean the introduction of undigested food into the intestine one, two or three times; it means that this has been going on for years, and sooner or later the mucosa will become irritated and enterocolitis will result.

DR. B. B. VINCENT LYON, Philadelphia: In my opinion the greatest contribution that Dr. Rehfuss has made is the differentiation between true chemical achylia and spurious achylia. I do not believe it is possible for us to determine cases of spurious achylia by any other than the fractional method. It is fallacious to select any single point of time for test meal extraction—be it fifty, sixty or seventy-five minutes—and limit the classification of achylia as determined by that one point. There is no doubt that in true chemical achylia we are fundamentally dealing with a progressive atrophy of the mucous membrane, and this atrophy is probably complete, inasmuch as few of us have seen the return of true gastric secretion. In some of the cases there has been a moderate and slow increase in the return of the juices, but in such cases we are dealing with an incomplete gastritis in which some cells are still capable of functioning.

The chief differential point to determine is the presence or absence of pro-enzymes. If we can determine the absence of pro-enzymes, we must conclude that we are dealing with gastric cells whose function has been pathologically destroyed.

In the treatment of the achylias it seems to me it is much more important to preserve the efficiency of the pancreatic ferments. If the intestinal digestants fail in compensation, the patient develops diarrhea. If the pancreatic ferments are studied by duodenal intubation, the proportional amounts of pancreatic ferments can be determined by the Crohn method and pancreatic substitution therapy instituted, and this may be very much more important than the administration of hydrochloric acid.

DR. MARTIN E. REHFUSS, Philadelphia: I realize that in fifteen minutes allotted to me it was not possible to do justice to the question of achylia gastrica. The question I tried to investigate most was the etiology of these cases. I have a very large number of so-called cases of achylia, but I maintain that careful study by careful methods will show that there is a so-called spurious type, a type in which delayed gastric secretion is frequent. At the hospital we have made a little over 15,000 examinations on all sorts of stomachs and have been able to note the effect of various foodstuffs under normal conditions. I consider this a rather important point from the gastric standpoint. We investigated a great many of these conditions and found various forms of achylia. I have said comparatively nothing regarding the so-called malignant achylia. One can hardly go into the wards of the Jefferson Hospital without finding at least one case, and at times several cases. I am speaking of those cases which are mostly functional. In looking over these cases we find, as Dr. Einhorn has said, that diarrhea when present is secondary and plays a minor rôle. Over 50 per cent. of our patients were constipated, and the remainder was distributed among patients who had attacks of diarrhea and of dietetic intoxication. The point made is that the cases are subject to careful analysis. I have found only one case in which on duodenal intubation there was true insufficiency of the pancreas. I have in my paper a list of the various types of bowel movements, but the interesting thing is that a careful study of the mechanism of the bowel movements will demonstrate that they are very different, depending on the different factors at work.

The question of benign and malignant achylia ought to be taken up. I wrote a paper regarding the protein content and material in the stomach in benign and malignant achylia. In the latter I found that there was a very different curve running throughout the gastric cycle; in other words, the increase of protein was brought out.

Duty of Maintaining Health.—Keeping healthy is a part of doing "your bit."—Connecticut *Health Bulletin.*

VESICAL DIVERTICULUM

REPORT OF TWO CASES, WITH REMARKS ON OPERATIVE TECHNIC *

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Vesical diverticula represent exaggerated sacculations of the mucous membrane, connected with the general bladder cavity by an opening of variable size. Some writers have expressed the belief that practically all cases are congenital, but latterly there has been a reaction from this position, with a tendency to ascribe most cases to acquired conditions (Lower[1]), the result of obstruction located mainly at the vesical neck.

In the two cases reported herewith the causative relation between obstruction at the vesical neck and the diverticula was plainly shown in the well defined ring of fibrous tissue that surrounded the neck of each bladder; while in the few other cases observed by us, but without being brought to operation, an obstruction was always demonstrable, so that our own inclination is to share belief in the predominance of acquired over the congenital origin of this malady.

Englisch[2] based a differentiation between congenital and acquired diverticula on the question as to whether their walls possessed muscular bands or not, asserting that those with muscular tissue were congenital; those without were acquired.

This classification, however, has been difficult of proof and has not been supported by all writers. Thomas,[3] in reviewing twenty cases of diverticulum observed in the Mayo Clinic, asserts that they were incapable of making such a classification. But whether congenital or acquired, it is probable that some obstruction has been present at some time in every case, either during intra-uterine life or subsequently.

Rokitansky's[4] declaration that diverticula were found only in bladders having hypertrophied walls was not borne out by the two cases herewith reported. In one the bladder wall was as thin as paper and broke down precipitately under gentle manipulation.

Diverticula are single or multiple, and vary considerably in their size as compared with the bladder cavity. Sometimes they are as large as, or even larger than, the bladder cavity.

Whether congenital or acquired, the walls of diverticula are supplied with so little muscular structure that they are inert and incapable of contributing to the evacuation of the organ. Urine contained in them tends to stagnate and undergo infection and decomposition, becoming then highly irritating and a frequent source of urinary sepsis, with chills, fever and other sequels.

No form of treatment has been able to supply this deficiency of muscular activity or contractility to the sacculation and hence, until a definite plan for their removal was finally evolved, operative treatment was a failure. Dilating or incising their orifice, for increasing the ease of communication between the main cavity and the accessory one, failed for the same reason.

Marked developments in respect to both diagnosis and treatment within the past half-dozen years have inspired the greatly added interest, as well as the more frequent recognition of this very imposing and portentous malady. Previous to 1912, although recognized in the abstract, vesical diverticulum was looked on in the light of a surgical curiosity, rather than a pathologic condition subject to remedial measures. Since then conditions have materially changed, and many persons the subject of diverticula and their attendant evils have been reclaimed from a very miserable existence to comfortable living. This satisfactory development has been due to progress in the technic of diagnosis and of operative therapy.

In addition to wider recognition of diverticula through the better and more universal practice of cystoscopy latterly in vogue, the taking of roentgenograms of the suspected bladder filled with a fluid opaque to the roentgen ray has proved a wonderful service. This has permitted ready identification of the sacculation, its location, size and number, if multiple, and has afforded evidence on which to base a conclusion as to the advisability and mode of surgical attack.

But more important still has been the simplifying of the surgical operative procedure by adopting measures to convert the more or less elusive and intangible diverticulum into a solid tumor by inserting into it the rubber elastic bag of Lerche,[5] or packing the sack with strips of gauze, as suggested by Cabot[6] and popularized by Lower in his several very valuable contributions on the subject. This feature of the technic has proved so valuable that much of the advance in this work must be ascribed to it.

The ureter, occasionally injured or severed during the operation, has been protected or repaired, as the case might be, by measures promoting that objective, such as preliminary ureteral catheterization, as advised by Beer, or the use of valve-flap transplantation, as suggested by Young.

Experience has proved the propriety of keeping the operation extraperitoneal, stripping the peritoneal membrane from the bladder wall as far as necessary to give access to the sac; and of sewing up the bladder wall tightly, using a retained catheter in the urethra for urinary drainage. It has been the habit of operators to drain the pocket from which the diverticulum has been removed by a rubber tube or cigaret drain passed through the abdominal wound that was made to gain access to the bladder; but we have used with entire satisfaction, and it is believed with distinct advantage, a stab-wound cigaret drain into the extraperitoneal space, thus avoiding contact with the main wound edges and promoting their early and complete union.

The indwelling urethral catheter is preferred by us over the method of repeated catheterization for emptying the bladder following the operation. There are few patients who cannot easily and comfortably wear a soft rubber catheter for this purpose for the few days required to secure union of the wound area, notwithstanding a widely prevalent impression to the contrary. Many patients can wear urethral catheters for weeks or months, without serious discomfort.

This measure is often one of the most efficient for preparing the patient for operation, affording gratify-

* Read before the Section on Genito-Urinary Diseases at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

1. Lower, W. E.: Diverticula of the Urinary Bladder, THE JOURNAL A. M. A., Dec. 5, 1914, p. 2015; Cleveland Med. Jour., January, 1914.
2. Englisch: Arch. f. klin. Chir., 1904, **73**, 1.
3. Thomas: Surg., Gynec. and Obst., October, 1916.
4. Rokitansky: Manual of Pathological Anatomy, 1855, **3**, 48.
5. Lerche: Ann. Surg., 1912, **55**, 285.
6. Cabot: Am. Assn. Gen.-Urin. Surgeons, 1912.

ing if temporary relief from retention and sepsis, and contributing much to the restoration of functional activity to the organs most involved.

It goes without saying that all preparatory measures now recognized as essential to the attainment of success in major genito-urinary operations should be provided.

The steps of diverticulum resection as carried out by us are as follows:

1. The ureter of the affected side is catheterized, the bladder being left filled with fluid and a rubber catheter in the bladder.
2. Epicystotomy is done, the bladder wall being attached to the abdominal wall on each side, but especially on the side opposite the diverticulum.
3. The diverticulum is packed with gauze.
4. The peritoneum is stripped off.
5. If the ureter has been cut, its end is opened and it is drawn through a button-hole into the bladder and attached.
6. The hole in the bladder wall from which the diverticulum was excised is sewed up. The stitches are reinforced, chromic catgut being employed.
7. Operation is performed on the prostate or neck of the bladder if necessary.
8. Stab wound drainage is used, with a cigaret drain.
9. The retained urethral catheter is inserted.
10. The anterior wall of the bladder is sutured and closed completely, with catgut.
11. The abdominal wound is sutured with catgut and silkworm gut.

The clinical pictures, as well as the method of securing permanent relief, are fairly well illustrated in the histories of two cases herewith reported.

REPORT OF CASES

CASE 1.—A man, aged 51, railroad engineer, American, married, had no history of any venereal diseases. The patient's health had been good up to the beginning of the present illness, which occurred Nov. 4, 1916. Up to this time he had been in the habit of urinating only four or five times daily and did not void at night. November 4, without recognizable cause, he began to have severe burning with urination and undue frequency. There was no blood in the urine at that time, but with a continuance of the irritative symptoms he noticed that blood appeared ten days later (about November 14). The blood was mixed with the urine and did not precede or follow the act. With remissions there was a continuation of these symptoms until his arrival at the Frisco Hospital, in the service of Dr. G. W. Cale, Nov. 25, 1916. His general condition then seemed very poor; he was thin and looked run down. There was excessive frequency of urination day and night, together with much pain each time; both urines were cloudy with pus and blood appearing microscopically. There was colon bacillus infection. Cystoscopy, November 29, showed widely diffused cystitis of marked intensity. The well defined orifice of a diverticulum was located in the left posterolateral segment of the bladder, anterior (distal) to the ureteral ridge. The orifice appeared about the size of a dime. The bottom of the diverticulum was not visible. The ureter catheter inserted into it reappeared at the orifice after 3 or 4 inches of catheter were used. No stone was observed. The ureteral orifice was not visible on this side. Roentgenograms of the bladder filled with thorium solution showed a definite sacculation about the size of an apple, posteriorly and to the left of the bladder, attached to it by a narrow neck.

Operation was performed Dec. 9, 1916, with the assistance of Drs. Moore, Woolsey and Smith. Anesthesia was given by Dr. Wood. This operation followed ten days after preparatory treatment, consisting of frequent irrigations through a retained catheter, rest, internal antisepsis, etc. With the bladder fairly well filled and the patient in the semi-Trendelenberg posture, an incision was made in the midline of the abdomen until the anterior wall of the bladder was reached. The peritoneum was stripped from the bladder, partly by a dissection with scissors but more by the gauze-covered finger. It was noticed that the whole anterior wall of the bladder, particularly toward the left, was very thin, at some parts as thin as paper; which explained the fact that when an attempt was made to place stay-sutures in the anterior wall, the wall suddenly broke down and opened up the bladder cavity. After the field had been dried, several catgut sutures were placed in the right wall of the bladder, attaching it to the abdominal wall on that side. The left wall was controlled by a stay-suture left loose and was serviceable later as a guide. Inspection revealed a spacious bladder cavity with ureteral openings plainly visible; and slightly anterior to the left ureteral opening could be seen the orifice of the diverticulum, corresponding to the observation made by cystoscopy. Narrow strips of gauze were then stuffed into the diverticulum until it was quite full. This maneuver was facilitated by grasping the margins of the orifice with forceps and holding them well up, thus permitting a much larger quantity of gauze to be inserted than would otherwise have been the case. The diverticulum was in this way converted into a solid tumor about the size of a pear, outside of the bladder. The peritoneum was then stripped from the left bladder wall and from the tumor. The earlier part of this maneuver was easy, but became more difficult later, as the diverticulum was situated so low down in the pelvis and behind the bladder that it became less accessible. Part of the separation had to be made with scissors. The pedicle was found to be as thick as a finger. With one forefinger through this neck for guidance it was excised with scissors after the tumor had been well lifted out of the cavity. Hot moist gauze controlled the rather rapid oozing of blood into the pocket from which the tumor had been removed. Before closing the bladder it was observed that a dense, fibrous ring surrounded the neck of the bladder and presented positive and marked obstruction to the outflow of the urine. This ring was strongly dilated with a uterine dilator until it presented no further obstruction. Evidently this had had a marked bearing on the development of the diverticulum. The wound in the bladder wall was closed with several layers of chromatized catgut; reinforced until the closure seemed satisfactory.

At this point effort was made again to identify the left ureteral orifice which had been disturbed by the operative manipulations, but it could not be identified. However, no leakage of urine could be seen outside of the bladder on that side and the discharge of the urine into the bladder seemed regular. From this observation it appeared highly desirable to catheterize the ureter of the side involved previous to beginning the operation so that it might be identified at any step. This was carried out with complete satisfaction at another, subsequent operation. The anterior wound of access through the bladder wall was closed tightly with a continuous chain-stitch of catgut, without drainage. Two cigaret drains of large size were placed in the pocket to the left of the bladder and were brought out of a stab wound in the left inguinal region, serving the good purpose of providing ample drainage without interfering with the union of the abdominal wound. The muscles of the abdominal wound were united with catgut; skin with silkworm-gut without drainage. A retention catheter, size 20 French, was left in the urethra. Considerable drainage of bloody serum and urine escaped from the stab wound in the next two or three days, due largely to the fact that the catheter became slightly displaced, but on replacing it and applying the Bremerman suction drainage apparatus this impediment was relieved and the operative field remained dry thereafter. No bleeding nor any objectionable symptoms occurred. The only rise in temperature at any time was on the third day, when it was 100 F.; the remainder of the time it was normal. No drainage occurred from the wound after the fifth day; primary union occurred throughout. In a week the patient was able to urinate voluntarily, completely emptying the bladder.

December 15 (the sixth postoperative day), the wound was dry, all sutures were removed and urination was normal and not attended with residuum. No measures were necessary thereafter.

CASE 2.—An American manufacturer, aged 39, at the time of his first visit, July 21, 1913, was referred by Dr. J. T. Barbee. The earliest memories of childhood of the patient

were connected with slow, difficult, prolonged urination, frequently repeated. He was never able to urinate promptly and satisfactorily as compared with other children of his acquaintance. This difficulty persisted throughout his younger life, and about fifteen years ago there was an increase in the various symptoms, including painful urination, infection, intense clouding of the urine, constant desire, etc. There had been no bloody urine that the patient had noted except after using the catheter, which he had begun about a month previously and had used daily since. The white sediment in the urine he had noticed for the previous ten years. He had found a glassful of urine left over after each effort of voluntary urination. His general health had been poor; he has always been thin and anemic. There was never a definite investigation of his condition prior to March, 1913. At that time Dr. Barbee examined and recognized obstruction at the vesical neck and prescribed irrigations to relieve the infection, together with the use of sounds. This produced only partial success so that the patient was referred to us, July 21, 1913. Neither palpation by rectum nor cystoscopy disclosed any evidence of prostatic enlargement or outgrowth. On the contrary, the prostate seemed unduly small. There was, however, a large, relaxed, atonic bladder holding from 25 to 35 ounces of urine without difficulty; and through the cystoscope was observed at this time the opening of a diverticulum located in the posterior wall of the bladder, low down. Although no especial resistance to the dilator was encountered on the introduction of this instrument, the above evidence, together with the history, led to the conclusion that there was contracture at the vesical neck and a diverticulum connected with the bladder was noted. Both ureters were catheterized, and healthy urine was drawn from each.

At this time the operative technic for diverticula had not been worked out to the degree of satisfaction since attained, so that it was concluded to omit operative measures on it and apply those for the purpose of removing the obstruction at the neck. At this time the usual quantity of residual urine following voluntary urination was about 28 ounces. Progressively increasing dilation of the neck by means of the Kollmann dilator improved the patient's ability to urinate and reduced the quantity of residuum to about 8 ounces within a month. It did not relieve the infection or relieve him from the recurrence of septic urinary chills and fever that had been one of his most disagreeable symptoms. After a period of this form of treatments given at home the patient returned, Jan. 13, 1914, and was found again to have 20 ounces residuum. Then a perineal urethrotomy was made; a finger introduced through the perineal wound revealed a definite ring of fibrous tissue that surrounded the neck of the bladder and made positive resistance. This was at first stretched widely with the uterine dilator; but being still appreciable it was incised with the probe-pointed bistoury until free access was obtained. Drainage by means of a urethral catheter was secured.

Great improvement ensued, but still there was a tendency later to recurrence, which was treated with dilatings. The residuum was then reduced to 2 or 3 ounces, less than ever before. After the patient went home the dilatings were continued even up to 45 F., but the benefit was not maintained. Frequent chills and fever and other manifestations of urinary sepsis recurred, and the patient's health continued below par so that when he returned in January, 1917, we concluded it best to go at once to the removal of the diverticulum, which was then believed to be the cause of the continued disturbance.

Cystoscopy again confirmed the presence of the diverticulum, the orifice of which seemed to be even larger than it had been in former years. The operation was done, Jan. 20, 1917; ether was administered by Dr. Clapsaddle; Drs. Moore and Woolsey assisted. The same method as in the case previously reported was carried out. About ten yards of gauze in strips was packed into the diverticulum, the peritoneum was stripped from the bladder diverticulum, the latter being very inconveniently located under the base of the bladder. This, however, did not prevent its enucleation, after which it was resected. The opening was sutured tightly with chromic catgut. Before closure of the anterior vesical wound, the fibrous tissue surrounding the neck of the bladder was again demonstrated with the finger, though it was not nearly so tight as formerly. It was widely stretched with the uterine dilator until it offered no further resistance. The bladder wound was then sewed; a stab wound to the left of the bladder was made for draining the cavity from which the diverticulum had been removed. The bladder wound and abdominal wound were closed without drainage.

Following the operation there was scarcely any bleeding; there was good drainage and no systemic reaction. January 25, the patient was in excellent condition. There had been only a small amount of drainage from the stab-wound. The cigaret drain was then removed. The retained catheter was removed from the urethra, January 31, and the patient's ability to urinate freely and to empty the bladder completely was then demonstrated. The patient could not remember ever having been able to urinate with such completeness and satisfaction. This practically completed convalescence, and he went home in good condition.

THE RESULTS OF TREATMENT OF BLADDER TUMORS *

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The treatment of bladder tumors prior to 1910 was in almost all cases a surgical one, with an attempt at partial or complete removal of the growth. Whether the tumor was benign or malignant, operative procedure offered the only hope of cure or alleviation. The brilliant results obtained by Nitze in his endovesical treatment of bladder tumors were not duplicated by other urologists, as the skill necessary for the employment of his methods was not perfected. The introduction of fulguration by Beer and later the employment of radium are two procedures which have served radically to change our ideas, and have consequently affected our attitude in the selection of the proper treatment for any individual case.

When fulguration was first employed, the results obtained by different surgeons were apparently immeasurably superior to the results secured by old operative methods. It began gradually to be realized, however, that all vesical tumors were not amenable to this form of treatment, and that while certain tumors disappeared with surprising rapidity, others responded only after long and vigorous applications, while others again were not affected in the slightest degree.

In order to secure an explanation of the difference in the response to treatment, we have made a study of the pathology of the different tumors and tried to correlate the different types and their response or resistance to fulguration. The results of this study have shown that the tumors which respond most readily to fulguration belong to the benign papilloma type, while those which are not affected, or are often stimulated in their growth, are histologically papillary carcinoma. There is, however, an intermediate group of tumors, the malignant papilloma, which varies in its response to this treatment, some responding almost as readily as the purely benign type, while others approach in their resistance the true papillary carcinoma. The differentiation between the malignant papilloma and the papillary carcinoma may, in many cases, be extremely difficult, and, notwithstanding the

* From the James Buchanan Brady Urological Institute, Johns Hopkins Hospital.
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histologic picture, the final diagnosis may be reached purely by the response to fulguration or radium. The employment of radium within the last few years has necessitated still further studies regarding the type of tumor in which this agent has proved valuable. As with fulguration, it has been learned by experience that certain tumors disappear under its influence, while others apparently are not affected by it.

Much confusion has always existed concerning the nature and pathology of bladder tumors. Most of this confusion exists as regards the papillary tumors which are the commonest of vesical neoplasms. Until a definite classification is adopted and a specific nomenclature employed, these inaccuracies will continue. For example, the use of the term "cancer" for the papillomatous, noninfiltrating types of tumor, even though there be histologically malignant changes present in the epithelium, is confusing, because experience has shown definitely that certain therapeutic measures suitable for one are wholly inadequate for the other. Frequently the surgeon in reporting the results of a given form of treatment for cancer may include in his series cases of malignant papilloma. The result of such a report leads to erroneous conclusions. A classification which has proved at least a satisfactory working basis is the following, because it is possible to correlate the histologic and clinical picture with the response to different therapeutic agents.

The papillary tumors may be classified as benign papilloma, malignant papilloma and papillary carcinoma. Papilloma is a name which common usage has popularized in medical literature, and it is used to denote a group of tumors having certain gross characteristics. The term "papilloma" has come to imply a pedunculated, papillary form of villous tumor springing from the mucous membrane of the bladder and being essentially composed of a branching connective tissue framework, lined by epithelium in several or many layers. Statistics prove conclusively that papilloma is by far the most frequent tumor of the bladder, and when it is further considered that practically all the papillary carcinomas represent an advanced malignant degeneration of tumors which in their early stages were papillomas, the preponderance of this type of vesical neoplasm can be appreciated.

The gross appearance of papillomas varies considerably, and there is no definite characteristic which will differentiate the benign from the malignant. In most instances it is impossible from the gross appearance to decide the character of the growth, so closely in general appearance do the benign and malignant papillomas resemble each other. The pedicle in the malignant papilloma is freely movable over the underlying mucosa, and there may be nothing in its appearance to reveal its malignant character. In the vast majority of cases, the differentiation between the benign and malignant papillomas can be made only by the most careful microscopic study, and it sometimes necessitates the examination of sections from various portions of the tumor. In the benign papilloma, the connective tissue axis is lined by an epithelium which has a palisade arrangement at the base and above this many layers of oval longtailed cells which are uniform in size, shape and staining characteristics. Toward the surface the cells become flattened, and the most superficial are similar to the epithelium of the normal bladder mucosa. In the malignant, the arrangement of the epithelium is changed, and instead of being in regular, uniform layers, it is disordered. The individual cells are very irregular in size and shape, and take the stain with varying degrees of intensity. These variations from normal are even more evident in the nuclei. At times, owing to the lawless growth of the epithelium, the papillae fuse so that the regular papillary arrangement is destroyed. Not infrequently in the same field, papillae may be seen undergoing various degrees of alteration. In one portion the epithelium may have all the characteristics of the benign papilloma, but close by may be papillae in which epithelial changes characteristic of malignant papilloma are very evident.

The term "malignant papilloma" should be reserved for those tumors in which the malignant changes are confined to the epithelium, and in which there is no infiltration of the epithelium into the connective tissue framework. When the epithelium breaks through its basement membrane and begins to invade the axis of the papilla or its main stalk, it no longer should be considered a papilloma, but a papillary carcinoma.

In order to arrive at some conclusion as to what may be expected from the different forms of treatment, we have included in our studies only those cases which have been seen since January, 1911. This makes it possible to compare our results of the last six years in which recent procedures have been employed with the results obtained prior to this time when operative measures alone were used. From Jan. 1, 1911, at which time fulguration began to be employed for the first time in our clinic, until April 1, 1917, 145 cases of bladder tumor have been observed. Of these there were 64 cases of papilloma, 74 of papillary carcinoma, 3 of adenocarcinoma, 1 of colloid carcinoma, 1 of cystic adenoma and 2 of multiple vesical polyps.

THE TREATMENT OF PAPILLOMAS

Of the sixty-five cases of papilloma in our series, thirty-four were treated by fulguration alone, the Oudin or unipolar current being almost exclusively used. In five of these, previous suprapubic excision had been performed and the tumors represented recurrences. In twenty-six of the thirty-four cases treated by fulguration, subsequent cystoscopic examinations were carried out, and in ten cases, or 29 per cent., recurrences were noted. In seven cases the recurrence was present in less than one year, in one case after one year, in one case after one and one-half years and in one case after two years. In three of these cases the recurrence was in the region of the original tumor, and in the remaining seven they were on portions of the bladder wall distant from the site of the primary tumor. Of the sixteen cases in which there was no recurrence, one patient was well for six years, one for five years, one for four years, three patients for three years, three for two years, two for one year and five for less than one year.

The recurrent tumors, with one exception, have all responded to fulguration like the original tumor. This one exception is of extreme interest.

CASE 1.—This patient had a papilloma several centimeters in diameter just back of the ureteral orifice, which disappeared rapidly under fulguration. For several months after the disappearance of the tumor, the mucous membrane in the tumor-bearing area appeared perfectly healthy. Shortly after, cystoscopy revealed a peculiar reddening and slight bulging of the mucous membrane in this region without ulceration or definite tumor formation. At first this was thought to be a localized inflammatory area. The process, however, seemed to spread, and a piece removed by the cystoscopic rongeur revealed an infiltrating carcinoma with the mucosa covering

it practically intact. This is undoubtedly a case in which cancer cells from the malignant papilloma had metastasized into the deep bladder wall and there continued to grow after the original tumor had completely disappeared. This case really should be considered as a metastasis rather than a recurrence.

One other case is deserving of special mention because the recurrences continued over so long a period.

CASE 2.—This patient, aged 52, was seen in February, 1912, with a large papillomatous tumor covering the left lateral wall and with several smaller tumors around the vesical orifice. The small tumors readily disappeared, but the large tumor responded only after months of vigorous and intense fulguration. Within a few months after the last vestige of the original tumor had disappeared, several recurrences the size of a pinhead were seen in widely separated portions of the bladder. These responded readily to fulguration. Since then the patient has been examined with the cystoscope on an average of about once a month, and practically at every examination small papillomas are found. During the last five years, probably several hundred tumors have been removed in this way. At the present time, the tendency to recurrence is just as active as it was five years ago, but it has been possible by watchful and persistent care to destroy the recurrence as fast as they form.

Treatment by Radium and Fulguration.—During the past two years, for papillomatous tumors which have shown histologic changes characteristic of the malignant papilloma or which were unusually resistant to fulguration, radium has been employed in combination with fulguration. Depending on the size of the tumor, varying amounts of radium have been employed, ranging from 200 to 1,000 milligram hours. Of the eighteen cases treated by this combination, in seven the tumors were multiple. Two patients discontinued treatment before the tumors had been removed. In the remaining sixteen cases, the tumors were completely destroyed. In all but one of these, subsequent cystoscopic examinations have been made, and in four cases, or 27 per cent., recurrences were found. In all four cases the recurrences were present in less than one year. The remaining eleven cases were free from recurrence for periods of time as follows: three for two years, four for one year, three for six months, and one for three months.

The following case illustrates the specific rôle which radium seems to play in rendering malignant papillomas, which have proved resistant to fulguration, amenable to this form of treatment.

CASE 3.—A man, aged 75, had a papillomatous tumor 3 cm. in diameter just back of the trigon. Cystoscopically the tumor was pedunculated, with short stubby papillae. Microscopic examination of a piece of tissue removed showed the characteristic changes of malignant papilloma. The tumor was apparently in no way different, either cystoscopically or microscopically, from other tumors in which fulguration is effective. The tumor was fulgurated over a period of six months at biweekly intervals, and at the end of this time it was about three-fourths its original size. In the beginning of the treatment, the tumor decreased definitely but slowly, and finally it seemed to remain stationary in size. Frequently a fulguration sufficiently vigorous to coagulate apparently the entire tumor mass was employed, but examination two weeks later, on the separation of the slough, would reveal the tumor apparently unchanged. Finally radium was applied directly to the surface of the tumor, both the beta and gamma rays being employed. These radiations totaled 600 milligram-hours and were carried out over a period of eight weeks, 103 mg. of radium being applied for one hour at approximately weekly intervals. At the conclusion of this radiation, the tumor showed no evident changes either in size or appearance. The tumor was now vigorously fulgurated, and disappeared completely after one treatment. The patient died six months later of pneumonia. Necropsy revealed no recurrence in the bladder and there were no metastases present.

Up to the present time there have been six other cases responding only slightly to fulguration which, after varying amounts of radium, have yielded readily to the high-frequency treatment. All of these cases were of the malignant papilloma type.

Another case of considerable interest is the following:

CASE 4.—A man, aged 50, had two papillomatous masses on the anterior bladder wall which had received a large amount of fulguration elsewhere without any apparent improvement. The resistance to this type of treatment was confirmed by us. A course of radium was then employed which was followed subsequently by fulguration, the tumors apparently disappearing promptly. Cystoscopy one month later revealed a recurrence in the same area. This was treated in a manner similar to the other tumors, with disappearance. There was noted on cystoscopy after the disappearance of the tumor, in the region formerly occupied by it, a small shallow cuplike depression in the bladder wall, resembling a cellule. Examination three months later revealed another recurrence. The tumor occupied so ideal a position for resection that operation was decided on. When the bladder was exposed, a diverticulum was found at the point of the insertion of the urachus. This was filled with tumor, which readily explained the recurrences. The diverticulum communicated with the bladder by a narrow orifice and the tumors previously destroyed were implantations of the tumor concealed in the diverticulum.

Treatment with Radium.—In three cases the papillomas were treated with radium alone, and in all three cases the tumors treated disappeared under the influence of radium. One of these cases is of particular interest in that the patient had numerous malignant papillomas around the vesical orifice and a localized infiltrating papillary carcinoma involving the right ureteral orifice. Any operative procedure, short of complete cystectomy and prostatectomy, would have been useless. It was possible, however, to destroy the papillomas by means of radium within a few weeks, after which a resection of the papillary carcinoma, with transplantation of the ureter, was successfully carried out. The papillary carcinoma and other forms of infiltrating malignant tumor, in our experience, as will be considered later, have not responded to this form of treatment, and resection was consequently indicated. This case probably illustrates very well the possibilities of a combination of treatments for securing results practically impossible of attainment by any one procedure.

Technic of Radium Applications.—In this connection it may be well to outline briefly the technic we have followed in the application of radium to bladder tumors. The treatment in practically all cases has been carried out with 103.7 mg. of radium element. In the majority of the treatments a fenestrated brass capsule has been employed and both the beta and gamma rays utilized. In other cases, however, the radium has been contained in a capsule of platinum 1.5 mm. in thickness, a screenage sufficient to filter out practically all of the irritating beta rays. The capsule containing the radium had been introduced into the bladder in the beak of an instrument not unlike the sheath of the irrigating cystoscope. These instruments permit the passage through them of an observation cystoscope by means of which the tumor may be viewed and the radium accurately placed on it. After the radium has been directed against the

tumor, the instrument is held in a fixed position by means of a mechanical arm attached to the cystoscopic table. The radiations are usually given throughout the period of an hour at each seance and carried out from one to three times weekly, depending on the tumor and the reaction of the patient to the treatment.

Treatment by Suprapubic Removal.—This procedure was carried out in ten cases. In six of them the tumors were removed by the actual cautery and in four by resection. Of the former there were two recurrences in less than one year, while in the latter no recurrences were noted. It should be stated that in both cases in which recurrences were found the tumors were very extensive and occupied a large portion of the bladder wall. Of the patients treated by removal with the cautery, one has been well six years; one, two years; one, one year, and one for six months. Of those resected, three have been well five years, and one, one year.

PAPILLARY CARCINOMA

In eighteen of the seventy-four cases of papillary carcinoma, the tumors were considered operable, and in all of them radical resections were carried out. In five cases the ureter was transplanted, and in one case both ureters were similarly treated. In these eighteen cases there was only one operative mortality, that being the case in which both ureters were transplanted The death in this case occurred in the third week, being due apparently to pulmonary embolism. It has been possible to secure data concerning all of the eighteen patients. Eight have since died, and of the ten living, one has been well for six years, one for five years, one for four years, and seven for less than one year. It is noteworthy that recurrence in the suprapubic scar, which was a not infrequent sequela in our earlier operation, has not been observed in any of these cases. This is probably due to the greater care which has been exercised in preventing implantations during operation.

In fifty-six cases, or 75 per cent., the papillary carcinomas were so extensive that radical excision was considered impossible. In eleven of our extensive cases fulguration was employed, but aside from symptomatic relief, nothing was accomplished. In a few instances, it was possible to destroy enough of the tumor to give temporary relief from mechanical obstruction, while in certain of the cases, hemorrhage was relieved. In no instance was it possible completely to destroy the tumor.

Treatment by Radium and Fulguration.—In eleven cases a combination of radium and fulguration was used. The radium in every instance was applied directly against the tumor mass, and varying amounts, from a few hundred to several thousand milligram hours of radiation, were given. In the majority of cases both the beta and gamma rays were employed, but in the remaining the radium was heavily screened with sufficient platinum to filter out practically all of the beta rays. The combination of radium and fulguration of this type of case in no instance caused the complete disappearance of the tumor, or, in fact, any marked effect on it. In some cases, however, some symptomatic relief was obtained.

Treatment with Radium.—In thirteen cases with extensive infiltrating carcinoma, radium alone was employed. The results in this series differ in no respect from the cases treated by the combination of radium and fulguration. As in the latter series, a number of cases were relieved symptomatically, but in no case was there complete disappearance of the tumor.

Diagnosis.—The study of our results strongly emphasizes the necessity of early differentiation of the papilloma from the papillary carcinoma, because the endovesical methods at our command have proved to be futile in the treatment of the latter type. On the other hand, these endovesical methods for the treatment of papilloma yield results incomparably superior to any of the more radical procedures. The differentiation of the benign and malignant papilloma, so far as treatment is concerned, is not so essential, for in the majority of the latter variety, fulguration proves most satisfactory. In the small group which proved resistant, the combination of radium and fulguration will accomplish the desired result.

The differentiation between the papillary carcinoma and the malignant papilloma is not always easy, but in the majority of cases cystoscopy, palpation, histologic examination of a portion removed and a consideration of symptoms, either alone or, as is usually the case, in combination, will furnish information sufficient to make an accurate diagnosis.

Cystoscopy.—It is surprising how frequently from cystoscopy alone one is able to distinguish the papilloma from the true carcinoma. While the pedicle of the papilloma is rarely distinctly visible, often the tumor mass can be seen to sway as a whole in the fluid, which indicates its pedunculated character; and at other times it is possible to view slightly beneath the mushroom-like edge of the tumor. It is impossible from the cystoscopic appearance of papillomas to determine whether they are benign or malignant. When, however, the malignant changes are so advanced that infiltration of the bladder wall has occurred, there are certain cystoscopic appearances which nearly always enable one to arrive at a fairly accurate diagnosis. The presence of necrosis in the papillae is indicative of carcinoma, and is usually associated with invasion of the underlying bladder wall. In the earlier stages, when the tumor has just begun to invade the bladder wall, it may not be possible cystoscopically to determine this point; but when the process is at all advanced, the tumor loses its pedunculated character and becomes sessile in type. Frequently, around the margin of the tumor is seen edema, or bullae, which are usually indicative of a cancerous invasion of the bladder wall below. At other times little tumor nodules can be seen beyond the main tumor growth. This again is indicative of cancer. While it is impossible definitely to describe all the appearances which serve to diagnosticate the papillary carcinoma from the malignant papilloma, the cystoscopist of experience is usually able to differentiate them, and it is interesting to note how frequently the cystoscopic diagnosis proves to be correct.

Palpation.—Occasionally, when the bladder is extensively involved with an infiltrating form of growth and the abdominal wall is thin and soft, the hard, irregular mass can be detected. When malignant growths occur on the posterior wall of the bladder, or on the posterior lateral wall, rectal examination frequently gives most valuable information regarding the nature of the growth and its extent, and frequently determines the possibility of complete eradication by operative procedures. When the growth infiltrates the bladder wall, induration can be detected, and the extent of the bladder wall involvement can

be more or less accurately mapped out. About 50 per cent. of bladder tumors occur on the posterior bladder wall in a position accessible to the examining finger. Sometimes not only the induration is detected in the bladder wall, but later the seminal vesicles are also involved, and still later the prostate. In rare instances, the growth may extend through the rectum and a rectovesical fistula may result. This complication occurred in three cases in our series. It may be safely said that marked induration of the bladder wall, which is felt through the rectum, is strong evidence of carcinoma. In the female, valuable information regarding the condition of the posterior bladder wall may be obtained by vaginal examination.

EXCISION OF A PIECE OF TUMOR FOR DIAGNOSIS

For a number of years we systematically removed pieces of bladder tumor by means of the Young cystoscopic rongeur for the purpose of histologic examination. The information derived from this method would seem to furnish conclusive evidence of the nature of the tumor, and consequently enable one to select accurately the type of treatment best suited to the tumor in question. Unfortunately, the evidence derived is not always conclusive, because of the fact that the portion removed is not always a safe index of the character of the remainder of the tumor. The piece removed may show no, or very few, malignant changes, while other portions of the tumor may be definitely carcinomatous. When the piece of tumor excised shows, however, definite carcinoma, the employment of radical procedures suitable for the individual case should be adopted without delay, and time should not be lost in the employment of the usual endovesical methods of treatment. The excision of a piece of tissue will also prove of value in differentiating the different types of vesical tumors. It should be noted, however, that the removal of the tissue by this means has been criticized as increasing the risk of metastasis. This has not been our experience, and the information obtained frequently counterbalances the theoretically increased risk of metastasis.

SYMPTOMS

It has also been our experience that when a severe, intractable cystitis is associated with bladder tumor, the tumor has proved practically always to be cancer.

In rare instances, when the cancerous process is very early, it may be impossible to determine this by the usual methods. In these cases it has been our custom to test out, as it were, the nature of the tumor by means of fulguration and radium. If the tumor does not show prompt response to this combination, it can be assumed that it is of a cancerous nature.

METASTASIS

When the possibility of metastasis in a given case is considered, it is again important to know the type of vesical tumor concerned. In our series of sixty-four papillomas, 75 per cent. of which were malignant, four cases of metastasis were noted. In all four cases the tumor was a pedunculated papilloma, which in every instance disappeared completely under fulguration alone, or fulguration and radium combined. In one case, evidences of metastasis did not develop for four years after the removal of the primary tumor, but in the interval a great many recurrences had been destroyed.

Of eighteen papillary carcinomas in which the carcinoma was considered sufficiently well localized to attempt resection, and in which it was possible completely to remove the local growth, seven patients have since died of cancer and one of intercurrent disease. Of those living, only three have been well for a period of more than four years. When the carcinoma is extensive and deeply infiltrates the bladder wall, metastases are usually present. It should be recognized, however, that at times most extensive involvement of the bladder may be present with negative findings at necropsy, so far as metastases are concerned. In three of our cases in which the tumor was so extensive that complete removal seemed impossible, and in which death occurred while under observation, no metastases were demonstrated postmortem.

CONCLUSIONS

The results of our experience in the past six years may be thus summarized: It is essential to determine accurately the type of tumor in a given case, in order to select the treatment best suited to the particular type in question. The early recognition of papillary carcinoma is most essential, and the diagnosis being made, the tumor should be radically resected, if operable. In our experience fulguration and radium have proved valueless in the cure of this type of tumor.

In this connection, it should be emphasized that, following the complete removal of a papillary carcinoma by resection, a recurrence may develop which in some cases proves to be, in its early stages, a malignant papilloma, and in this stage will respond to fulguration, or to a combination of fulguration and radium. In three of our cases in which a papillary carcinoma was radically removed, recurrences were found later and destroyed, by fulguration in two cases, and by radium and fulguration in the third.

While the results following the use of radium in the infiltrating carcinomas have been disappointing, the response of the more resistant malignant papillomas to this agent has been most encouraging. Radium alone will unquestionably destroy both the malignant and the benign papillomas, and on account of its influence on the former makes possible their cure without the employment of radical procedures which would otherwise be necessary. It has been our custom, when the diagnosis of malignant papilloma had been made, to give a varying amount of radiation, dependent on the size of the tumor, and to follow this by fulguration. Some of our malignant papillomas, in which fulguration was first tried without success, radium has rendered readily responsive to this treatment. Indeed, several cases which have stubbornly resisted frequent and vigorous fulguration, after a course of radiation have responded promptly to this measure.

The development of the endovesical methods has rendered it possible to effect a cure in practically all cases of papillomas, and the employment of the more radical operative methods has not been productive of results at all comparable with those following the more conservative methods. With the exception of rare cases, in which an operative procedure is carried out, resection alone should be performed, because operation is indicated only when the tumor is a papillary carcinoma, and mere superficial destruction, as with the cautery, etc., will usually be futile.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. LEWIS AND MOORE, AND GERAGHTY

DR. EDWARD L. KEYES, JR., New York: As regards carcinoma of the prostate, I confess I have been a little more enthusiastic about "cures" than I am now. Without being cured these patients may stay in very good health, but even those who get brilliant results from a single treatment, like the two men shown here, have to be treated again and again, to keep those results good. Of course, the condition of the prostate itself is no index of the patient's general health. I saw a patient recently who was treated with radium elsewhere and whose prostate feels almost normal, but who is dying of carcinoma in his lumbar glands. But one would expect to cure patients captured early enough for radium treatment at a time when the carcinoma has not extended beyond the prostate.

Dr. Geraghty has noted that fulguratjon after radium works better than fulguration before radium. It seems possible that those tumors would have disappeared if he had been able to keep his hands off them for a sufficient number of months after the radium. I have seen a case of what Dr. Geraghty would call malignant papilloma improve very much in the second three months after a dose of radium.

DR. WILLIAM F. BRAASCH, Rochester, Minn.: As Dr. Geraghty has pointed out, the treatment of tumors of the bladder unquestionably has been greatly improved in recent years. It is reasonable to assume that in the first attempts to remove tumors by these less formidable measures a certain number of unsuitable cases would be treated, with consequent failures. If we were to judge the comparative value of non-operative methods from statistics of past years, the operative procedure would suffer very much by the comparison. This is illustrated in recent papers by Drs. Gardner and Young.

The improvement in surgical technic has been along several lines. First, the bladders are cleaned up. Many of the patients with bladder tumor have a coincident cystitis and pyelonephritis and should be treated prior to operation much the same as patients suffering with prostatic conditions. Second, the wound should be carefully protected at the time of operation to prevent infection. Third, resection with the cautery knife is better than with the ordinary knife, and, together with cauterization of the surrounding area, should preclude any infection of the wound area. Fourth, formerly the ureters were often transplanted into other portions of the bladder with poor success, and sometimes with the death of the patient. If the ureter is markedly diseased, as it frequently is, it may be simply ligated and dropped into the wound. In such cases the kidney is usually largely destroyed and the patient does not suffer much reaction.

With the last year or two I have frequently seen patients who had been fulgurated over long periods of time. One patient had had forty fulgurations in two years. When I cystoscoped him it was evident that he had carcinoma and that it was too late for resection. Undoubtedly the tumor could have been resected if the patient had been operated on earlier.

I wish to emphasize that if, after three or four fulgurations, and possibly after using radium, the tumor does not markedly decrease in size, there is no excuse for continuing such treatment, and surgical procedures should be used. We have tried radium alone in a few cases of carcinoma, but with poor results. I disagree with Dr. Geraghty when he says that if a tumor of the bladder cannot be resected there is no object in attacking it surgically. Unquestionably good results can be obtained by using a cautery and searing the tumor almost to the muscular wall.

DR. G. G. SMITH, Boston: I should like to bear witness to the efficiency of radium in one case which I have had under personal observation. About two years ago I operated on an elderly man and took out an adenomatous prostate and a papilloma of the bladder. He did very well for two years. About Christmas I cystoscoped him and found he had an infiltrating growth extending upward from the sphincter. I sent him to Dr. Barringer, who treated him with one application of radium. That was some six weeks or two months prior to this meeting. I cystoscoped him recently and the growth had entirely disappeared, as far as one could tell. There was some sloughing around the base of the bladder.

In regard to the treatment of diverticulum, there is one point in the technic. I am not sure whether it has been put on record or not. After a diverticulum has been freed outside of the bladder by dissecting around it, it is easier to cut off the diverticulum and to approximate the cut edge if the diverticulum is inverted so that it projects into the bladder. The cutting and suturing can then be done inside the bladder in a more accessible situation.

DR. LEO BUERGER, New York: The great value of histologic examination in determining the presence of malignancy is not sufficiently appreciated, because adequate material is rarely obtained by the cystoscopist. I have, therefore, made it a routine for a number of years to attack all papillomas situated in accessible portions of the bladder with the snare, through my operating cystoscope. With this procedure we can often succeed in removing papillomas *en masse*, sometimes in two or more pieces, and can often completely eradicate the growth in one, two or three sittings, following up the removal of the growth by fulguration of the pedicle. Thus, not only is the time of treatment, the number of séances of the fulguration method, much reduced, but the pathologist receives adequate material for the thorough investigation of the nature of the tumor.

I think it is bad teaching that permits the cystoscopist to determine by the effects of fulguration as to whether a given tumor is malignant or not. Many men are treating such tumors who are not sufficiently expert to know whether a tumor is responding or not, the lack of response being attributed to faulty technic, improperly applied or improperly functionating current, or what not. Thus, patients have been referred to me after having been subjected for weeks and months to the fulguration treatment, in which the application of the snare or operating forceps through the operating cystoscope permitted a diagnosis of carcinoma at the very first visit.

The snare is a simple instrument, and with a little practice can be applied almost as easily as a ureteral catheter.

DR. KEYES: Do you fulgurate at the end of each treatment?

DR. BUERGER: Whenever feasible I fulgurate at the end of each treatment.

DR. MARTIN KROTOSZYNER, San Francisco: With reference to the method used in the treatment of diverticulum of the bladder mentioned by Dr. Smith, I recall a patient 73 years old in whom a very large diverticular sac was drawn into the bladder, just like one would turn a glove finger; the sack was then resected and its cut edges were stitched by several rows of catgut sutures. The patient eventually made a good recovery.

While the early and radical operative removal of malignant bladder tumors must be always recommended and carried out wherever feasible, the observation, nevertheless, that not infrequently patients live longer without than with operative interference would open the question whether, in the absence of distressing symptoms, an operation is indicated in all cases and under all circumstances.

DR. W. C. QUINBY, Boston: I want to add my mite to the paper of Dr. Lewis on diverticulum of the bladder by the brief report of one case. A man aged 55 had suffered from intermittent chills and fever, which had kept him a chronic invalid for twenty years, until I eventually got hold of him and succeeded in demonstrating and removing a large diverticulum on the right side of his bladder, much in the same way as Dr. Lewis has detailed to us. The first point which I wish you to note is the long story of invalidism which these patients so often bring. I hope that that period is going to be much diminished in the future. It is now being much diminished; the more so as the attention of the general practitioner is more forcibly called to such lesions as a cause of pyuria. The second point of note occurred during the convalescence of this patient. While water was being given in very liberal amount to help out the severe renal infection, the heart suddenly became irregular and weak. It was impossible by the usual means to rule out an acute dilatation from

too much fluid. The electrocardiogram, however, came to our assistance. The tracing showed the condition to be due to an auricular fibrillation and not to decompensation of the heart due to the fluid. I was able to continue the fluid, and, under appropriate treatment, the fibrillation ceased. The patient is now cured of his diverticulum.

Dr. Bransford Lewis, St. Louis: I think that Dr. Quinby and I have a similar impression as to the value of presenting these reports, and that is one of encouragement for undertaking, in the first place, the diagnosis of these cases, and, in the next place, operating. One of these patients whose case I reported had a longer history of trouble than the one that he speaks of. He was 42 years of age and gave a history that ever since he could remember he had had chills and fever and could never clean his bladder; he was always septic; and he recovered just as promptly as did the other. Before I undertook these operations I was rather fearful that they were difficult to carry out and that the convalescence would be prolonged. I remember in certain cases of other operators the patients did have very difficult convalescence. These men both were well within ten days after the operation, and were thoroughly comfortable, urinating and emptying the bladder completely, and happy over the result. I think encouragement is the keynote of the presentation of the cases.

Dr. John T. Geraghty, Baltimore: With regard to Dr. Keyes' remarks about the disappearance of these tumors under radium, I think that is perfectly true. In some of the cases which have been allowed to go without fulguration the tumors have disappeared. We have used fulguration to cause a more rapid disappearance of the tumor. Those which disappeared under fulguration after irradiation would probably have disappeared under irradiation alone.

With regard to the technic of resection, we make it a rule to burn the tumor vigorously before attempting resection. As soon as the bladder is opened the whole tumor is destroyed down to the base. Whether one carries on the dissection by the knife or the cautery makes little difference. When one destroys the whole area thoroughly it amounts to resecting that area of the bladder wall.

With regard to the cases mentioned by Dr. Braasch, it has been my experience that the tumors which we can destroy by the cautery are tumors that practically always respond to fulguration and radium. Those cases with infiltration I do not think would be cured by destroying with the cautery. There are a few cases in which the tumor is a definite, infiltrating carcinoma with a pedicle, and that tumor must be resected. Cutting off the tumor through the mucosa at the pedicle with the cautery is probably just as efficient as a resection.

With regard to the remark that the mortality from resection should not be as high as 12 per cent., our mortality in twenty-two resections has been one death.

A Family Epidemic of Syphilis.—E. Jeanselme reports that syphilis was brought into a previously healthy family by the soldier husband of one of the daughters. He had been at the front for nine months. Three weeks after his return to his troop from his brief furlough, his young wife and her nursing babe began to show syphilitic lesions. The child was weaned at the tenth month, and the grandmother and a younger sister, who tended the babe, both developed syphilids in the mouth and tonsils, and the latter in the skin. They also took care of the babe of a third sister, and this infant soon developed syphilids in the palate, with roseola and mucous patches in the mouth. The mother of this infant was infected in turn. There are now six syphilitic members of the family, and only three in the household are still apparently exempt. As one of these, a girl of 12, has been sleeping with the younger sister, she is probably infected likewise. In making his report to the Société médicale des hôpitaux (*Bulletins*, p. 854), Jeanselme added there is a regulation forbidding furloughs to soldiers in a contagious stage, and asked why this regulation was not enforced. The syphilitic lesions developed in the mouth of those tending the babes, probably from the habit of tasting the infant's food, using the same spoon.

A CASE OF CYSTITIS CAUSED BY BACILLUS COLI-HEMOLYTICUS

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WASHINGTON, D. C.

As little mention of the hemolytic properties of colon bacilli is made in the literature, the following report may not be without interest.

From a patient, an adult woman with some obscure bladder or kidney trouble, several samples of catheterized urine were collected in sterile bottles and submitted for bacteriologic examination with the suggestion that the case might be tuberculous. The urine when received was cloudy, but on standing or centrifuging rapidly settled out clear. Microscopically the sediment showed numerous pus cells, no casts, and large numbers of a doubtfully motile and gram-negative bacillus of general colon morphology. No acid-fast organisms were found in the urine.

Three guinea-pigs were inoculated in the groin with the centrifuged urine sediment as follows: Oct. 9, 1916, one was inoculated with the sediment of about 50 c.c. of urine, and died, November 6, showing at the site of inoculation a necrotic area and pocket under the skin, but no enlarged glands or other signs of tuberculosis. A mixed growth was obtained in cultures from the inoculation site and from the heart's blood. None of these organisms could with certainty be identified with those originally found in the urine. October 18, two guinea-pigs were inoculated with the sediment of about 100 c.c. of urine. One of these died, November 14, showing no evidences of tuberculosis, the chief lesions being ascites, slight peritoneal inflammation, and, as in the case of the first animal, a necrotic area and pocket at the site of inoculation. The third guinea-pig died nearly a week later, November 20, and showed lesions in every respect like those of the second animal. As in the case of the first guinea-pig, mixed cultures were obtained from the second and third animals, but none of the organisms so obtained could be identified with the original organism in the urine. It seems probable that the guinea-pigs died from slow toxic effects of the bacilli and pus cells injected, and that the inoculation sites became infected with outside organisms.

Four white mice were inoculated with the urine sediment, two intraperitoneally, and two subcutaneously at the root of the tail. All four mice lived about one month without showing evidences of ill effects of the inculations when, along with other mice in the laboratory, they were destroyed by rats.

Cultures of the sediment of the urine and of the urine itself were made with the following results: On plain agar, on starch agar, and on plain broth no growth was made. On coagulated pleuritic fluid, on hydrocele agar, and on Petroff's egg medium for tubercle bacilli, an abundant moist colorless growth occurred.

On blood agar plates by the addition of a few drops of blood taken from a finger to melted agar tubes and inoculated with some of the urine, colonies readily developed, in marked contrast to their absence when plated on plain agar. On the blood agar plates a distinct zone of hemolysis occurred around the colonies resembling that produced by *Streptococcus hemolyticus*. Four different samples of the urine were plated in the foregoing manner and always with the same results. After preliminary inoculations on the

more special mediums, growth occurred on plain mediums.

After preliminary insolation the bacillus reacted on sugars as follows: Acid and gas with glucose, lactose, and mannite; no acid or gas with saccharose, raffinose, or inulin. Gelatin was not liquefied. Indol was produced.

A macroscopic agglutination test was made, with a suspension in salt solution of the bacilli grown on coagulated serum, serum from the patient, and serum from an apparently normal person. After five hours in the incubator the following unsatisfactory results were obtained, the marks in parentheses being those obtained with the normal serum: Dilution 1:10, — (++++); 1:20, ++ (++++); 1:40, ++ (+++); 1:80, ++ (++); 1:160, ± (+).

The organism seems to be the same as that which Schottmüller and Much[1] called *Bacillus coli-hemolyticus*. Schmidt,[2] in a review of hemolytic intestinal bacteria, says *Bacillus coli-hemolyticus* cannot be considered as a well established variety, and thinks the hemolytic properties of the organism are rather accidental. He does not believe that power to cause hemolysis is any special indication of pathogenicity.

The inability of this bacillus to grow on plain agar when first planted from the urine is very interesting, as colon bacilli are usually easy of cultivation. It shows a high degree of specialization and adaptability on the part of the colon bacillus when what is ordinarily an intestinal saprophyte can become so restricted in its habits as to need human blood or other complex proteins for its nutrition. Administration of hexamethylenamin in this case had no effect in restraining the organisms. The patient was given general and local treatment and an autogenous vaccine, and made marked improvement.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLE HAS BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

CAMIOFEN OINTMENT.—An ointment obtained by mixing iocamfen (a liquid obtained by the interaction of iodine 10 parts, phenol 20 parts and camphor 70 parts, containing about 7.25 per cent. free iodine) with an equal weight of a mixture composed of lard, wax and oil of theobroma, but containing nearly all of its iodine in the combined form.

Actions and Uses.—The ointment has the properties of fatty iodine compounds, phenol and camphor.

It is used in various skin diseases, inflammatory swellings, itching, etc.

Dosage.—It is applied directly or on gauze, undiluted or mixed with fatty substances. The parts to which camiofen ointment is applied should be dry and the application of mercuric chloride before or after the use of the ointment must be guarded against.

Prepared by Schering and Glatz, New York. No U. S. patent or trademark.

1. Schottmüller and Much: München. med. Wchnschr., 1908, **55**, 435.
2. Schmidt: Centralbl. f. Bakteriol., Orig., 1909, **50**, 359-373.

Military Medicine and Surgery

PRESENT STATUS OF SURGERY AT CASUALTY CLEARING STATIONS

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Service in two years of the great war, with an interval visit to civil life, leads one readily to comparative views. The periods of service have been passed at base hospitals and casualty clearing stations under British Expeditionary Force control. About one half of the base hospital work was performed under clearing station conditions, and it is desired to convey to readers in the United States a general conception of the progress of war surgery and of the detailed work of advanced casualty clearing stations.

ORIGINAL FUNCTION OF CASUALTY CLEARING STATIONS

The original function of casualty clearing stations was to act as a very advanced collective depot for patients from contributory field ambulances with their outlying dressing posts. The position selected was one within a few miles of the firing line, fairly well isolated and remote if possible from the danger of active shelling (chance shelling and aerial bombing must always be anticipated). The situation chosen must also be near the rail head, where ambulance railroad trains can be sidetracked and rapid evacuations practiced. The invaluable aid of gasoline motor ambulances makes these short transportations rapid and quite painless to injured men. Patients are brought from the field ambulances very quickly after their reception there, because little major operative work is attempted at these posts—merely a classification and dressing are all that is desired. Formerly the clearing stations did not attempt much surgery, especially in rushed times, but some serious cases were dealt with and retained, for which a relatively small but very efficient medical staff was maintained. Stations two years ago averaged a capacity of 200 wounded; they now can care for a thousand.

PRESENT STATUS

Method of Group Arrangements.—In the present status of casualty clearing stations, we find them grouped in series of three, in close geographical proximity, provided with ample staff and with tent facilities to withstand a maximum strain. This close position permits the feeding of one ambulance train from all three, and allows of the following arrangement: Motor ambulances with patients are received by No. 1 in the series of three, until 200 patients are taken in, or until twenty-four hours have expired from the time the first patient came in. The next station in the series then receives in like manner 200 patients or for a period of twenty-four hours; following that the third station completes the round. Such an interrupted distribution gives each station an opportunity to operate on the patients that enter and to evacuate rapidly as many as possible. Rest for the staff is also provided. The capacity for the wounded is equivalent to a thousand men. This does not, however, indicate 1,000 beds, because many men are left lying on the stretchers

without being put in bed and are passed along thus to the base.

Method of Reception and Distribution of Patients.—This is simple. Separate reception tents are provided for walking and lying patients with a medical officer in charge of each. Officers—even prisoner officers—are segregated. Walking patients are dressed, fed and evacuated, unless they demand surgical interference, in which event they are sent to the theater for minor operations, cared for, and then evacuated in chronological order of reception.

Lying patients are distributed, marked with colored tags, into resuscitation, preoperative (major and minor) and medical wards (for gassed or other medical conditions). Not yet diagnosed patients or instances of doubtful diagnosis are carried to an examination room and are carefully gone over by two medical officers. For the resuscitation ward those patients are intended who are moribund. There are facilities for administration of salt solution, external heat and stimulants. The men are not handled or removed from their stretchers, so that this ward need contain no beds. In the preoperation ward the same rule is followed: Patients are prepared on their stretchers; a preoperative dressing is applied and they await movement, in order, to the roentgen-ray or operating room. The various tents and structures are so arranged, moreover, that a continuity of traffic of these patients is possible, resulting in no confusion of passing stretcher bearers or recarrying over the same ground. Human energy and distress of the patient are minimized. Hospital tents are marked with colored flags corresponding to the colored tags, so that bearers make no errors.

Personnel.—A commanding administrative officer, a head of the surgical division, a quartermaster, a laboratory officer, a roentgen-ray operator and various medical officers needed in the different positions outlined compose the official list. There are, of course, the necessary number of enlisted men, clerks, sergeants, servants, etc. In addition there are assigned to each station surgical teams, composed of picked men of surgical ability, each supplied with his own anesthetist, operating nurse and orderly. These teams divide the major and minor surgical patients in rotation as fast as they are able to finish each operation. Team work is divided thus: Each team works for eight hours a day, except during rush times, when they are expected to perform sixteen hours of duty. Three teams are on duty from 9 a. m. to 5 p. m. in the major theater, using five or six operating tables; two teams work from 5 p. m. to 1 a. m., and one team from 1 to 9 a. m. under ordinary conditions. The work is continuous as long as the hospital is taking in. Teams cease to take on patients one-half hour before the expiration of their time, so that their table may be cleaned and prepared for the next group.

Operating Theater.—The major operating theater is centrally located; the minor theater is near the dressing tent. All are electrically lighted. The arrangement of five or six tables in the major theater permits the anesthetist to move from patient to patient in advance of the operator, while dressings and splints are being applied or the operation is being finished. The operating nurse assists the surgeon; the orderly brings supplies, helps with the dressings, and cleans up the table. There is complete independence for each team.

An ample supply of dressings, gloves, instruments and splints is at hand, and the sterilizers for instruments are constantly boiling during work. After instances of gas infection or before serious operations—especially head and joint—a complete clean-up of the surgeon and nurse is expected; otherwise, for extremity wounds, gloves may be washed on the hands, and then dipped into sterilizing solutions.

Nitrous oxid gas, ethyl chlorid, chloroform and ether anethesias are used. The Shipway warm vapor chloroform-ether apparatus is much in vogue, and is very useful for nasal anesthesia in head operations.

Great rapidity and thoroughness of operative procedure is required. In times of stress, the minor operating theater can be expanded to permit the performance of major operations.

Dictation of the pathologic condition found, together with the details of the operation, is made by the surgeon to a clerk who enters this information on the field card and then copies it into an operative book, together with the patient's name, rank, distribution, etc. A serial hospital number is given to each patient as he enters the reception tent. As he leaves, this is removed from the field envelop by the evacuation officer, in order to provide a record of each man and to prevent any one getting lost. Varying with the severity of the injury sustained, patients are retained for a period of from a day or two to ten days. Many are sent to tents near the evacuation compound to await removal to the base by train as soon as they have recovered from the anesthesia. No beds are needed in these tents. Wounded prisoners are given the same treatment as the allied soldiers.

Character of the Surgery.—The character and practice of surgery in these stations is fairly uniform. Team surgery has but recently been introduced; statistics, however, from a push still in progress have shown that individual suffering and length of convalescence are lessened and mortality greatly lowered by this method. The policy of operating as early as possible in at least 90 per cent. of casualties—except moribund patients—has come to stay. In brief, this course may be outlined as an intent to do radical early excision of contused and tousled tissues, to remove foreign bodies, to irrigate and close opened joints, and to close most wounds snugly thereafter if possible. The use of bismuth iodoform pertrolatum paste, to which I recently called attention,[1] varies with different surgeons. It has distinct value; its limitations demand a broader discussion. For gas infections or suspected gas infections, muscle group excisions, very radical in character, are indicated. The Carrel-Dakin solution irrigation method usually follows, and field envelops are marked C. D. so that the treatment may be continued on the train during transfer to the base.

Distribution of selected types of wounds to different groups of casualty clearing stations is also now being practiced. One group cares for all the head injuries in its vicinity; another all the chest and abdomens and another, extremity surgery so far as this is possible. It is understood, of course, that the surgeon cares for all wounds received by the man, regardless of the type of his most severe injury.

Head injuries are treated by complete excision of contused scalp and pericranium, bone edges and buried fragments. Dural and cortical tissues are gently trimmed off, and foreign bodies extracted when possible. Careful closure of the wound is very important, capillary drains being used, the scalp being dissected from the pericranium, or a plastic repair performed.

1. Speed, Kellogg: Prompt Removal of Foreign Bodies in Gunshot Wounds, THE JOURNAL A. M. A., Sept. 29, 1917, p. 1079.

In all brain injuries, bromids are given, and the patients kept at rest for some time.

Chest injuries are likewise exercised, even rib excisions being performed; and pneumothorax is closed off, foreign bodies being extracted if possible. Hemothorax is aspirated early, and cultures are made. If positive, early drainage is performed.

In the extremities, all contused and dirtied tissues are excised down to freshly bleeding and contracting muscle, regardless of extent. Joints are approached with the greatest caution because the synovial surface may not be invaded. A painstaking careful dissection of dirtied tissues is made, and if the joint is opened or a foreign body is within, it is taken out, irrigation with neutral solution of chlorinated soda, ether, or the injection of glycerin-formaldehyd solution is made and then the joint is *quickly closed off* by suturing its capsule together or into the bone. The external wound is sutured or not depending on circumstances, and splint immobilization follows. I wish to impress the value of this method on surgeons entering war service. I have in preparation an article dealing with gunshots of the knee which shows plainly the great advantage of this treatment over the "leave-it-alone" or continuous irrigation treatment. All patients from casualty clearing stations are evacuated to the base as soon as they can be safely and consistently moved.

No. 12 Casualty Clearing Station, B. E. F.

FIELD SANITARY ORDERS

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WASHINGTON, D. C.

The science and practice of military hygiene, not so many years ago, in the field at least and on a large scale, was in a somewhat unsatisfactory state. It is true that we had ideas on the subject—many of them good ones—but some very important things were not known even so recently as the Spanish-American War. For instance, our ideas were comparatively hazy as to the methods of transference of typhoid fever; we did not know that flies act as vectors, and we had but crude notions as to the effect of contact in spreading the disease. The average physician knew little about the microscopic diagnosis of malaria. Much of the typhoid fever in our army camps was erroneously called malaria—to the considerable detriment of the sanitary situation. Again, we did not appreciate the great importance of what we now call "carriers" in the propagation of infectious disease, and consequently our quarantine methods were quite imperfect.

Decided changes have, however, occurred. As the result of great improvements in laboratory and experimental methods, and the application of these to hygienic problems, we have now formed rather complete ideas as to how camp sanitation ought to be effected, at least with reference to the most important of the camp diseases. Our doctrine has been abundantly verified by the results of the practical experience of our army surgeons. Many of them, certainly those who have had considerable field experience in later years, nowadays know what to do along these lines. If we could carry out fully the scientific measures that we now know how to apply, camp diseases would no longer be serious matters. The new men will readily learn in the instruction camps, or, if they do not have the benefit of these, soon after seeing active service with the troops, all the important points, most of them quite simple, as to what can and should be done in field sanitation.

The real issue of importance nowadays in military sanitation is whether those things that we know how to do and that can readily be done will actually be put into practice. This, in turn, depends almost entirely on whether the sanitary officer can obtain the cooperation of the line officers and soldiers. Everything in the army comes back in the end to the question of rank and command. I think that, without doubt, the most satisfactory—indeed, the only sure way—is to induce the commanding officer to issue a general sanitary order in the beginning, signed by his authority, and explaining in a general way the sanitary duties of the command, and the methods prescribed for their accomplishment. This persuasion ought not, in these times, to be very difficult. Laymen are coming more and more to realize that something must be done in the way of sanitation. Having issued this order himself, the commander will continue to support it, especially after he sees the results, including much benefit to his own peace of mind, that accrue from the plan.

The real secret of success in military sanitation—the key to practical results along these lines—is the sanitary order. I think the idea important enough, at least, to be exploited for the benefit of the many civilian physicians now in army service. A minor benefit accruing from the order is the avoidance of differences among medical officers themselves as to the sanitary measures advised in their several organizations. These might all be good and yet conflict with each other when it comes to the question of administration.

We have always had some notion in the Army as to sanitary orders and their value; but the first time that the idea was worked out in detail in a camp of large dimensions, and used in a practical way, was at the divisional maneuver camp at San Antonio, Texas, in 1911. This was, indeed, the first camp on a large scale, of which we have record in our Army, in which the sanitary arrangements and results may be said to have been entirely satisfactory. There was no serious disease—very little of any kind—thus affording a most striking contrast with our Spanish War camps of a few years before. The occasion was, indeed, an epoch-making one for field sanitation. The main point is that the remarkable sanitary results attained there coincided with the fact stated above, namely, that this was the first occasion of the issue and use as a working basis of the divisional sanitary order. We had the antityphoid vaccination, it is true; we had many improved sanitary methods; but that these really proved effective was no doubt largely due to the order. It was issued by Major-Gen. W. H. Carter, under advice of Col. H. P. Birmingham, division surgeon, and Major P. F. Straub, sanitary inspector. The experience was repeated, and entirely adequate sanitary results were attained in the division camp at Galveston, Texas, a few years later. Major-General Carter was again in command. Col. W. B. Banister was division surgeon, and Major R. B. Miller, sanitary inspector.

The following model for a divisional sanitary order, which shows about what we should aim at, is based on the San Antonio order, and is constructed in accordance with the form recommended by Straub.[1]

1. Straub, P. F.: Sanitation of the Maneuver Camp at San Antonio, Texas, Mil. Surgeon, 1911, **29**, 607.

MODEL FOR DIVISIONAL SANITARY ORDER

Headquarters, Nth Infantry Division,
(Place)

General Orders, (Date)
No. ——

The following regulations for field sanitation are published for the guidance of all concerned:

1. Division Surgeon.—The division surgeon is charged, under the commanding general, with the general conduct and supervision of the Medical Department of the division, and will make timely recommendation concerning all matters pertaining to the sanitary welfare of the command.

2. Sanitary Inspector.—The division sanitary inspector is charged, under the division surgeon, with investigating and reporting on the sanitation of the command. He will report the results of his inspections to local commanders as well as to the division surgeon. Commanders of all grades are responsible for the sanitary condition of the localities occupied by their commands and for the enforcement of sanitary regulations within their organizations.

3. Regimental Surgeons.—The senior medical officer of each regiment or other organization will make at least one inspection daily of his command, and report orally any sanitary defects, with proper recommendations for the correction of the same, to his immediate commanding officer, who will immediately take the necessary steps for their correction, if within his authority. If beyond his facilities, or if considered impracticable, he will immediately report the facts, with full explanation, for action of higher authority.

4. Water Supply.—All drinking water supplies will be disinfected by the hypochlorite process in the field sterilizing water bag. To prevent subsequent contamination, containers must be kept scrupulously clean and protected from dust and other sources of infection.

5. Disposal of Waste.—Defilement of the ground in or about the camp is absolutely prohibited, and organization commanders will be held strictly responsible for the sanitary police of their respective camps. (*a*) *Human Excreta.*—Human excreta will be disposed of in pits provided with latrine boxes; urine by day in urine soakage pits, and at night by urinal cans placed in the company streets. Pits and cans will be burned out with crude oil and hay, and seats scrubbed with cresol solution, daily. It must be remembered that fly-proofing is the essential end aimed at in these waste disposal measures. (*b*) *Kitchen Wastes.*—Each company or other organization will construct and use exclusively rock pile incinerators for the disposal of all solid and liquid garbage. Garbage cans must be kept scrupulously clean. For the general waste of the camp areas not under the jurisdiction of subordinate commanders, rock pile crematories will be erected and used under the direction of the regimental sanitary squad. No bath or other waste water collections that might breed mosquitoes will be allowed. (*c*) *Picket Line Wastes.*—Picket lines will be gone over daily, and all manure and sweepings collected and hauled to the designated dumping ground, where they will be burned in incinerators. The picket lines will be burned over weekly with crude oil.

6. Food and Drink.—No articles of food or drink will be sold in camp, except in the authorized exchanges, and no purchases of such articles made by soldiers, outside of camp, except from properly licensed venders. Company kitchens and mess rooms will be securely screened, or such additional or alternative method instituted, acceptable to the division surgeon, as will prevent access of flies and dust to food or its containers.

7. Tent Hygiene.—Organization commanders are directed to assure themselves personally that suitable ventilation of tents and sunning of tent areas are practiced by their men; as also, adequate personal cleanliness. Mosquito bars and head nets and prophylactic quinin will be used when directed by competent medical authority.

8. Quarantine.—All regulations imposed by competent medical authority as to isolation in the case of infectious disease, or prophylactic measures in regard to the same, will be scrupulously observed by the command.

9. Sanitary Squads.—Sanitary squads will be organized by the division surgeon for each regiment, or other organization. One of the regimental medical officers will act as local sanitary police officer. He will be assisted by a Hospital Corps sergeant and the requisite number of Hospital Corps privates and civilian laborers. These squads will do whole-time work, and will supervise and assist in the purification of drinking water, the disposal of camp wastes, and in disinfection. A general sanitary squad, under a divisional sanitary police officer, will also be organized for sanitary work not pertaining to organizations, such as the handling of manure, general drainage, antimalarial work, the final police of vacated grounds, etc. Civilian sanitary laborers will be employed by the Quartermaster Corps and turned over to the Medical Department. The sanitary police officers will make requisition on the chief quartermaster for such transportation, labor or material as may be needed for sanitary work; when assigned to this service, they will not be diverted to other uses except by orders from these headquarters.

By Command of Major-General Blank:

A. B. C.,
Chief of Staff.

Official.
X. Y. Z.,
Adjutant-General.

COMMENT

The foregoing order, as stated, follows Straub's outline, which is the best for practical purposes. In Sections 4 and 5, certain suppositions are made for clearness' sake, as to the water supply and the methods employed for the disposal of excreta. Of course, in some camps, the water supply might be piped from a pure source, and disinfection would not be necessary; or, again, the incineration method might be used for the disposal of excreta. In such cases, the order could easily be modified to correspond with the local situation. In most other respects, the order, as written, would apply in any situation. The order can also, when necessary, be easily changed to apply to a brigade or regimental or even smaller camp. In any case, however, an order should issue.

Field orders should not go into too much detail as to methods; merely the authority and a general statement as to the kind of methods to be employed are wanted. The details are described from time to time in circulars published by the Surgeon-General's Office or the War Department. The order, in other words, is not intended as a sanitary text, but merely as a sanitary *authority*. Directness and conciseness are necessarily the chief desiderata in military orders.

The model suggested is perhaps a little too long, but by making it long I have been able to include by mention, or at least by inference, practically all the subjects to which the neophyte in field sanitation would be likely to have his attention at first directed. It is hoped that a careful perusal of the order will clear up what at first seems a rather difficult matter, and afford an easy and satisfactory means of orientation at this period for the new medical officer in the work of cultivating "preparedness" for his service in actual campaign.

The medical officer should never forget that *results* are what the nation demands. They must be produced. The way for the medical officer to secure them is to establish a satisfactory working relation with line officers, who alone have the power, and on whose action the successful or unsuccessful issue of the sanitary as well as of the military situation must in the final analysis really depend.

Army Medical Museum, Seventh and B Streets S.W.

THE VENEREAL DISEASES

(Concluded from page 126)

NOTE.—This is the fifth and final instalment of the series on "The Venereal Diseases." As already announced, these articles are being reprinted in the form of a manual which will be ready in about two weeks, price 25 cents.

PROGRAM OF ATTACK ON VENEREAL DISEASES

AN OUTLINE OF ACTIVITIES AND COOPERATING AGENCIES PLANNED TO REDUCE THE PREVALENCE OF THE VENEREAL DISEASES

Methods of attack on venereal diseases divide themselves into four classes:

A. Social measures to diminish sexual temptations.
B. Education of soldiers and civilians in regard to venereal diseases.
C. Prophylactic measures against venereal diseases.
D. Medical care.

A. SOCIAL MEASURES TO DIMINISH SEXUAL TEMPTATIONS:

(1) The suppression of prostitution and the liquor traffic.

(2) Provision of proper social surroundings and recreation.

These activities which have to do with social matters largely fall outside the jurisdiction of the medical service of the Army, but this service can render these activities more efficient by stimulating and supporting them, and wherever practicable such support should be given.

(1) Suppression of prostitution and liquor traffic in zones.

Keep careful track of conditions as regards these two matters in surrounding districts, in cities or towns where soldiers go, and in travel gateways.

In camps and zones, we have the following agencies which may be utilized:

The constituted authorities, military and civil.

The Commission on Training Camp Activities, War Department.

Local and national volunteer agencies may be utilized to discover failures and abuses, and to help otherwise in the work under direction of the proper authorities.

Outside the zones, a large number of forces can be used. Among these:

State Councils of National Defense.
Civil police and health administrations.
Associations of commerce.
Women's clubs.
The press.
Social hygiene and vigilance societies, and other social and religious organizations of influence in civil communities.

(2) Provision of proper social surroundings and recreation.

In camps and zones, plan to:

Develop social activities and amusements.

Provide places where soldiers may go for comradeship, to meet friends, to "loaf."

Supply an attractive place, or places, for soldiers to meet their women callers in camps and near camps.

Establish, under police authority, women patrols in zones.

Enforce rules against women being received in soldiers' tents or being allowed the freedom of camps.

Encourage facilities for interesting the soldier in reading, lectures, music, congenial friendships, hobbies.

For this purpose, we have for use in camps or zones, or both:

The Commission on Training Camp Activities, supervising activities of the Young Men's Christian Association, Playground and Recreation Association, Knights of Columbus, Young Women's Christian Association through its hostess houses, the American Social Hygiene Association, and other national and local organizations invited to carry on special activities.

Similar provisions for social diversions and proper social surroundings should be provided outside the zones, and if possible, provision at least for their inspection by military inspectors should be provided.

For use outside the zones, we have practically all the above agencies which are organized to conduct similar work in communities accessible to soldiers but not within the military zones.

An effort should be made to stimulate local organizations in towns near camps and at railroad centers to furnish proper social diversions and amusements for soldiers, and to provide places where they may go when on leave.

Enlisted men's clubs for this purpose, charging a small fee, say 25 cents monthly membership, are greatly to be desired.

Organizations of men and mature women to furnish members to meet soldiers in a friendly way, and to give them information and directions are desirable in towns and at railroad centers and other points in large cities where soldiers come in numbers. Fraternal organizations should be enlisted in this work.

Pressure should be brought to bear on the civil authorities to suppress vicious amusement places, to clean up parks and other recreation places, and to furnish for such places morals police. For this purpose, the members of special law enforcement organizations could be used.

Inspection of social and moral conditions in the camps, in the zones, and in contiguous districts and of the work being done by the various agencies for social betterment should be made by federal authorities. Similar volunteer inspections by dependable vigilance and other civic associations should be encouraged.

B. EDUCATION OF SOLDIERS AND CIVILIANS:

(1) *For Soldiers: (a) Lectures; (b) Pamphlets; (c) Exhibits.*

(a) Lectures to soldiers should be given by medical and line officers and by competent volunteers furnished by outside agencies, under invitation and direction of the Medical Department. These, beside inculcating continence, should explain the risk and waste of venereal diseases and the program adopted to avoid them. Lecturers without authority should not be permitted.

(b) A pamphlet should be given the soldier as soon as possible after enlistment. This pamphlet should be very brief and should warn the soldier of the venereal dangers to which he may be exposed and give instructions, if he should be exposed, to report as promptly as possible to his regimental infirmary.

It would be very desirable if a pamphlet could be distributed at the place of meeting of Exemption Boards. Later somewhat fuller pamphlets should be distributed to soldiers through medical and line officers, or by accredited volunteer social hygiene societies.

(c) Exhibits, such as the Coney Island exhibit of the New York Society of Social Hygiene, the exhibit of the National Cash Register Company, the exhibits of the Oregon Social Hygiene Society, the Missouri Society and other exhibits and demonstration methods worked out by the American Social Hygiene Association should be adapted to the needs of military life and furnished to each cantonment.

(2) *For Civilians:*

In the attack on the venereal problem, it is highly desirable that such educational activities as those outlined above for soldiers should be stimulated for the civilian population.

The influence of the military authorities should be given to the national organizations for social hygiene and to the numerous sanely conducted local organizations of the same sort.

Encouragement should be given to the organizations which are undertaking to arouse the interest of the woman population of the country in matters of social hygiene and for instructing women in regard to venereal diseases.

Organizations dealing with these matters which attempt to reach women should be encouraged, especially in the vicinity of camps. An increasing number of influential organizations, such as the General Federation of Women's Clubs and Patriotic Women's League, are indorsing and supporting sound social hygiene programs, and supplementing the more specialized efforts of such organizations as the Young Women's Christian Association and the Women's Christian Temperance Union.

C. PROPHYLACTIC MEASURES

Instruction in Prophylaxis:

Soldiers should be informed of the fact that there are prophylactic measures that reduce the dangers of venereal infection. But this instruction should take

particular care to inform them that there are limitations to such prophylactic measures and that they furnish only partial protection and in no sense give freedom from risk.

Regimental Infirmaries:

The provision of prophylaxis (early treatment) in regimental infirmaries, which should be open day and night, is imperative in any sane attack on venereal diseases. The prophylactic station should be utilized as a place for personal advice and education against future exposure, and should be conducted as an early treatment dispensary. Any spirit of levity or condoning sexual promiscuity should be discouraged, and obscene stories or objectionable conduct should be rigidly repressed. The men assigned as officers in charge of these stations should be mature and with the personality and force of character calculated to gain the confidence and respect of the men applying for treatment. The medical officer in command should be impressed with the strategic importance of the prophylactic station for education, appeal, and the securing of social facts of vital importance in the prevention of venereal diseases.

Infirmaries in Civil Centers:

In cities, where there are no adequate civil dispensaries to be used and through which soldiers in considerable numbers pass, either while on leave or in travel, there should be provided in accessible locations regimental infirmaries. In a few cities, where dispensary services are particularly well developed, regimental infirmaries may be replaced to advantage by accrediting these civil dispensaries for use. Information should be furnished to soldiers of the existence and location of such regimental infirmaries and available dispensaries.

Leaves of Absence: In the interest of health, long leaves of absence for soldiers should as far as possible be discouraged. Leaves of absence of more than twenty-four hours are particularly dangerous, and it would be desirable if leaves of absence should be timed from as early an hour in the day as possible.

In cases where soldiers have been exposed, particularly if for any reason exposure seems unusually dangerous, special observation of such exposed men should be made, and if practicable these observations should be repeated at intervals of a couple of days for two or three weeks.

All pressure possible should be made by military authorities against houses or women which experience shows are frequent sources of infection, and this should be extended as far as practical to prostitution generally. The more effective the repression of prostitution can be made the greater will be the reduction in venereal diseases.

All possible influences should be brought to bear to encourage civil authorities in the attack on prostitution in all its phases. A medical program for civil communities equivalent to the military program for prevention and treatment should be encouraged.

D. MEDICAL CARE

Hospital Organization:

There should be a special service in each cantonment hospital to care for skin and venereal diseases.

As far as possible, all such cases should be in charge of the venereal service, and where, for any special reasons, such cases must be under other services, the senior officer of the venereal services should be, if possible, consulted in regard to them.

In the venereal disease service, there should be at the head an experienced specialist in these diseases, and whenever possible another medical officer trained in venereal diseases should also be in the service. The other medical officers assigned to the service need not necessarily at the beginning be trained in venereal diseases.

In the event that mature specialists from the Medical Officers' Reserve Corps cannot be furnished for the head of the service in each one of the cantonment hospitals, it would be practicable to use two half-time men, serving on alternate days, to act as head of this service, these men to be obtained from adjacent large cities. Under such conditions, there should always be furnished a qualified junior officer.

Instruction in Venereal Disease for Medical Officers:

One of the important functions of these services will be to train a group of men in venereal diseases. The service will, if well conducted, rapidly develop the knowledge of these diseases among medical officers.

It should be distinctly understood that one of the duties of the trained specialists who go into this service will be that of teachers of venereal diseases to the less well trained medical officers, and regimental officers should be encouraged to avail themselves of the opportunity for instruction furnished by these services.

Emphasis should be placed on the necessity of high standards of technic in carrying out treatment.

Hospital Cases:

The cantonment hospital should have under its care all cases of venereal diseases which are in the acute, infectious stages: These include:

All cases of acute gonorrhea.

All cases of syphilis during the early infectious stage and which have chancres, mucous patches, or condylomata.

But it should be seen to that hospitalization of venereal disease does not become an abuse which is allowed to interfere unduly with military duty.

There should be no leaves of absence for infectious venereal cases, and cases which have passed the acute infectious stage but which might become dangerous through the possible development of mucous patches or of chronic gonorrheal discharge should not be allowed leaves of absence from camp.

Standard Records:

The syphilitic register of the army should be carefully and fully kept and social facts of epidemiologic importance should be secured in every case if possible.

Standardized Treatment:

An effort should be made to standardize in a general way methods of treatment, and provision should be made for some special instructions in venereal diseases for all medical officers who have charge of troops. To this end, a manual of instructions should be issued to each of the medical officers in the army. This should especially emphasize the great importance of early diagnosis and treatment in venereal diseases and outline suitable methods of treatment.

There should be furnished cards of brief instruction to patients with gonorrhea or syphilis.

Laboratory Facilities:

Laboratory facilities are necessary:

(1) For demonstrating gonococci and other bacteria.

(2) For demonstrating spirochetes by dark field illumination.

(3) For urinalysis (which should be required once a week for every syphilitic patient under treatment). These laboratory facilities should be in the wards of the venereal service.

(4) For Wassermann tests.
These to be in the general laboratory.

Inspections:

In order to keep up a high standard of effectiveness, there should be provision for inspection of these services by special inspectors in venereal diseases from the Surgeon-General's Office. These inspections should cover each of the four classes of attack specified.

INSTRUCTIONS FOR THOSE HAVING SYPHILIS
(SYNONYM POX)

Syphilis is a deceptive disease. Usually it is a very mild disease in its early course, giving the person afflicted with it little or no distress. Because it is so mild its victim is likely to pay little attention to it and to fail to go to the trouble to have it thoroughly treated. But in spite of its mild beginning, syphilis is one of the very serious diseases because, if it is not properly treated, it may later attack vital parts of the body and cause the greatest damage. It may produce ugly deformities; destroy health and shorten life; produce blindness and at times cause insanity. These results do not occur so often that you should become panic-stricken because you have syphilis, but they are common enough to make it necessary for your safety that you make every effort to get rid of the disease. These accidents of syphilis almost never occur in the early course of the disease. When they happen, it is usually years after infection, in cases which have not been cured.

The earlier in its course syphilis is thoroughly treated, the better are the results; it is, therefore, of the utmost importance to your future health and happiness that you should have your disease promptly and skilfully treated. If you do this, there is little danger that you will have further trouble from it; and after a few years you can marry without danger to your wife or to your future children. Your medical officers will attend to treatment of your condition, but it rests on you to do your part. Unless you cooperate and live up to instructions, treatment cannot be carried out with the best results.

One of the difficult things about syphilis is that to cure it often requires a long time—two years or more. In two or three weeks after you begin treatment, you will not know from any symptom that you have syphilis, and you will, therefore, be tempted to neglect further treatment. This is the great mistake that many persons with syphilis make. To insure future safety, treatment must be continued long after all evidence of the disease has disappeared. For your own good, you must see to it that you do not neglect your treatment after the first few months.

Syphilis is a contagious disease, but spreads only by contact with the virus or poison. The parts of the body that most often carry the virus are the mouth and the genital organs (privates). In order not to spread the disease you must be careful in your associations with others. If you are careful, you are not dangerous to others.

Obey the Following Instructions:

If you have any sore on your genitals, no matter how small, or if you think you have syphilis, report to your medical officer. Do not under any conditions rely on the "blood medicines" that promise to eradicate syphilis, and do not be caught by advertising doctors—quacks—who try to get your money by promising to cure you quickly. Do not let druggists prescribe for you; they are not qualified to treat syphilis.

Do not hesitate to tell your doctor or dentist of your disease. Later in life if you get sick at any time, you should tell your doctors that you have had syphilis, since this fact may furnish a clue to the treatment on which your cure depends.

Live temperately and sensibly. Do not go to extreme in any direction in your habits of life.

Try to get a reasonable amount of sleep—eight hours is the amount needed by the average person. And as a safeguard to others, sleep alone.

You should not smoke or chew tobacco.

Absolutely do not use alcoholic liquors. All experience shows that drinking—even moderate drinking—is bad for syphilis.

Take good care of your teeth. Brush them two or three times a day. If they are not in good condition, have them attended to by a dentist. But when you go to him, tell him that you have syphilis.

Do not have sexual intercourse until you are told by your physician that you are no longer contagious. It will interfere with the cure of the disease, and it is criminal, for it is likely to give the disease to your wife.

You must not marry until you have the doctor's consent, which cannot be properly given until at least two years have passed after cure seems complete. If you do, you run the risk of infecting your wife and your children with syphilis.

Early in the course of syphilis, while it is contagious, the greatest danger of infecting other people is by the mouth. Because of this danger, do not kiss anybody. Particularly, do not endanger children by kissing them.

Do not allow anything that has come in contact with your lips or has been in your mouth to be left around so that anybody can use it before it has been cleaned. This applies to cups and glasses, knives, forks and spoons, pipes, cigars, tooth picks and all such things. It is better to use your own towels, brushes, comb, razor, soap, etc., though these are much less likely to contamination than objects that go in your mouth.

If you have any open sores—you will not have any after the first week or two, if you are treated—everything that comes in contact with them should be destroyed or disinfected.

To live up to these instructions will only require a little care until you get used to them; after that, it will be easy. If you do live up to them, there is a good prospect that syphilis will not do your health permanent harm nor cause injury to others; and you will have the satisfaction of knowing that, after your misfortune, you have acted the part of an honest man in your efforts to overcome it.

INSTRUCTIONS FOR THOSE HAVING GONORRHEA

Clap—a Dose—Chordee (Painful Erection)—Swollen Testicle—Gleet

Gonorrhea causes so much discomfort that, unlike syphilis, it is not apt to be overlooked or neglected in its early course; but the discomfort of gonorrhea disappears long before the disease is gone, and patients are therefore apt to discontinue treatment before they are well. In such cases, the disease persists indefinitely as a morning drop or as "gleet"; perhaps not even these symptoms may be present, and the patient may suffer no particular discomfort of any kind, and yet be exposed to serious accidents to health and be a source of danger to any woman with whom he has intercourse.

It is a serious mistake to regard gonorrhea lightly. Gonorrhea may occasionally be very mild in its symptoms, but if neglected painful early complications and, later, very serious ones are likely to occur. Common early complications of gonorrhea are chordee, inflammation of the prostate and bladder, and swollen testicle. Common later complications are gonorrheal rheumatism, gonorrheal disease of the heart, and stricture. These later complications are all serious troubles. In addition to the dangers to the patient, uncured gonorrhea—which may show as a gleet or a morning drop or not at all—is as contagious as an acute gonorrhea; so that for the protection of your wife you must get well. Gonorrhea is the commonest cause of sterility and serious diseases of the pelvic organs in women.

The time to cure gonorrhea easily is early in its course. The sooner proper treatment is begun, the sooner gonorrhea can be controlled and the less likely are complications. After gonorrhea has become chronic, its cure is extremely difficult. It is, therefore, very important that the disease should be properly treated early in its course and that the patient should cooperate with his physician in doing those things which facilitate the cure. Gonorrhea can be completely cured, but in its treatment the patient must do his part.

Obey the Following Instructions:

Persist in treatment until your doctor tells you you are cured.

Do not try to treat yourself.

Do not use a patent medicine or some "sure shot" that may stop the discharges, but will not cure you.

Do not let an advertising doctor—a quack—get your money, and do not let a drug clerk treat you.

If you have had gonorrhea and you suspect that it is not cured, report to your medical officer.

During the acute stages keep quiet, and take little exercise. As long as you have any discharge avoid violent exercise, especially dancing.

In order to avoid chordee, while the disease is acute, sleep on your side, urinate just before going to bed, and drink no water after supper.

Never "break" a chordee. To get rid of it wrap the penis in cold wet cloths or pour cold water on it.

Except at night, drink plenty of water—8 or 10 glasses a day.

Do not drink any alcoholic liquors; they always make the disease worse and delay its cure. Also avoid spicy drinks, such as ginger ale.

Do not eat irritating, highly seasoned, spicy foods, such as pepper, horse radish, mustard, pickles, salt and smoked meats or fish.

Always wash your hands after handling the penis, particularly in order to protect your eyes. Gonorrhea of the eyes is very dangerous; it will produce blindness if not at once treated, and the infection is easily carried to the eyes on the fingers.

Keep your penis clean. Do not plug up the opening with cotton or wear a dressing that prevents the escape of the pus from it. Wash the penis several times daily.

Burn old dressings, or put into a disinfecting solution.

Never use anybody's else syringe or let others use yours. While you are using a syringe keep it clean by washing it in very hot water, and, when you have finished with its use, destroy it.

Avoid sexual excitement. Stay away from women. Do not have intercourse. It will bring your disease back to its acute stage and it is almost sure to infect the woman. Sexual intercourse while you have gonorrhea is a criminal act.

You are likely to obey instructions while your gonorrhea is acute, because it causes so much pain. Persist in them after the pain is gone; by so doing you will prevent relapses, make your cure much easier and more certain, and expose no one else to the disease.

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THE TREATMENT OF EPIDEMIC POLIOMYELITIS WITH SO-CALLED SPECIFIC HORSE SERUM

The recent reports by Rosenow[1] and by Nuzum and Willy[2] on the treatment of epidemic poliomyelitis with the serum of immunized horses, for which excellent results are claimed, are of considerable interest. The horses were immunized with the coccus recently found by several observers in the central nervous system in epidemic poliomyelitis, and consequently the question of the exact relation of this coccus to poliomyelitis is again raised.[3] In both reports, it is asserted that the serum used has protective and curative powers with respect to the experimental poliomyelitis of the monkey produced by means of poliomyelitis virus, that is, suspensions in physiologic sodium chlorid solution of fresh or glycerinated nervous tissue from human beings that have died with this disease, or from monkeys experimentally infected. While the coccus with which the horses were injected unquestionably occurs in poliomyelitis, and frequently may be present in the so-called virus, its exact relations to the disease have not been made fully clear because thus far it has not been possible to produce poliomyelitis in the monkey by injections of this coccus in undoubted pure culture. But in spite of the lack of this essential link in the chain of evidence necessary to establish that the coccus is the cause of the disease, it must be acknowledged that if the serum of horses immunized with the coccus protects against and even cures poliomyelitis in the monkey, an adequate experimental basis for a thorough trial of such serum in the treatment of the human disease certainly has been provided. It is clear, however, that the results of further experiments on the action of the serum in monkey poliomyelitis are required before the claims in favor of its protective and curative powers may be regarded as fully established. At this point it may be stated also that the assertion by Nuzum and Willy that a coccus quite like the one found in the central nervous system in poliomyelitis occurs regularly in the cerebrospinal fluid of poliomyelitis patients, not being in accord with the results obtained by other observers, cannot yet be accepted without confirmation from other sources.

Turning now to a brief consideration of the recorded results from the use of serum produced as indicated, we find that Rosenow treated fifty-four patients with nine deaths, but that six of the patients that died were moribund when the serum was injected, "and hence should not be included as treated cases." This would leave a death rate of 8 per cent. Sixteen of these patients were in the preparalytic stage, and all recovered. Of twenty-three patients in the same epidemic, nine died (35 per cent.). The effects of the serum in the individual case are often striking, at least apparently, because the symptoms soon subside, paralysis, for instance, being arrested and sometimes disappearing completely if in the early stages. As rapid improvement may occur spontaneously in poliomyelitis, as the diagnosis in the preparalytic stage must be difficult (sixteen of the patients treated with recovery are said to have been in this stage), and as it is impossible to form any opinion whether the treated and untreated patients that were the subject of this report are fairly comparable, it evidently is necessary, as Rosenow himself says, that many more patients be treated before conclusions can be drawn as to the exact value of the serum he used.

Nuzum and Willy have treated 159 patients, eighteen of whom died (11.3 per cent.). Of 100 untreated patients admitted during the same period of time to the same hospital, forty-five died (45 per cent.). We lack, however, a more detailed comparison as to the ages, severity of attack and general condition of the patients composing the treated and untreated groups. We have no information whatever in regard to the principles of selection followed in forming these two groups; consequently it is difficult to determine how much importance may be assigned to the apparently very favorable figures given in this report. These observers also emphasize the rapid general improvement commonly seen after the injection of the serum, there being in many cases a critical drop of temperature.

In conclusion, it may be said that the injection of horse serum, in the manner described with detail in these two reports, appears to be quite harmless in poliomyelitis; that the authors of the reports are deeply impressed with the apparent good effects of the serum; that their figures appear to show a great reduction in the death rate, but that the figures are probably not to be accepted without the reservation that they may seem more favorable than is actually warranted. Further observations will be awaited with much interest. We hope it may be found, and quickly, that a potent, specific antipoliomyelitis

1. Rosenow, E. C.: The Treatment of Epidemic Poliomyelitis with Immune Horse Serum, THE JOURNAL A. M. A., Sept. 29, 1917, p. 1074.
2. Nuzum, J. W., and Willy, R. G.: Specific Serum Therapy of Epidemic Poliomyelitis, THE JOURNAL A. M. A., Oct. 13, 1917, p. 1247.
3. The Bacteriology of Poliomyelitis, editorial, THE JOURNAL A. M. A., April 14, 1917, p. 1122.

serum, protective and curative, has been discovered. The suggestion may be ventured that even if it eventually should be found that serum produced as described in these reports has little or no specific effect on the essential cause of poliomyelitis, its use may be followed by favorable results due on the one hand to general nonspecific effects such as follow the intravenous injections of foreign proteins, and on the other hand to its action, specific in nature, on the coccus used in the immunization, which may be a secondary invader of no little importance in poliomyelitis.

THE QUALITY GRADES OF PROTEINS

It is beginning to be recognized by all students of nutrition that proteins from different sources may have unequal nutritional value. This is exhibited, for example, in the unlike efficiency of different proteins in sparing the body from a loss of tissue protein; it is likewise manifested by the striking differences in growth on diets alike in every respect except the character of the proteins they contain.

The reason for these biologic differences is now known to lie in the amino-acid content of the different proteins. Those albuminous compounds, which furnish the essential amino-acids in proportions approximating the ideal as determined by the body's synthetic needs, are most economical from the standpoint of nutrition. As a rule, though by no means in every instance, the proteins of meat, fish, eggs and milk exhibit a superior value as conservers of body protein when they are contrasted with the proteins of the widely consumed cereal grains. It is for this reason that Graham Lusk has proposed the grading of protein products offered for sale. He has advocated the sale of food by calories and not by pounds as the foremost step in true food reform; but in addition to this he suggests the indication of quality distinctions.[1] For instance, such proteins as will replace body protein part for part might be classified as Group A. Gelatin has practically no power to replace body protein and is therefore put by Lusk in Grade D. Wheat contains a mixture of proteins of Grades A and D in which those of Grade A predominate, so that wheat may be classified as having a protein value of Grade B; whereas corn, from analogous reasoning, may be said to have a protein value of Grade C. Lusk's plan is conceived by him to work out as follows: An ordinary dietary with a liberal allowance of protein contains 15 per cent. of its calories in that form. A can or package of food containing 15 per cent. of its calories in protein should have, Lusk proposes, a star placed with the letter determination of the grade of protein. For example, the label on a can of corn might read: "This can contains x calories, of which y per cent. are in protein of Grade C."

1. Lusk, Graham: Elements of the Science of Nutrition, Philadelphia, W. B. Saunders Company, 1917, p. 562.

The initiation of a plan such as that here developed would do scarcely more for man than has been attempted for our domestic animals during the past few years. Concentrated cattle feeds are commonly sold in containers plainly stamped with the proximate analysis of their contents, so that the addition of calorific values and quality labels would mean merely the extension of an already accepted principle in the feed industries. Hart and Humphrey[2] of the Wisconsin Agricultural Experiment Station have, however, recently pointed out certain practical objections to so much of the food classification scheme as has been reviewed above in relation to the quality of proteins. A few years ago it would scarcely have been anticipated that different proteins might exhibit supplementary values toward each other. The researches of McCollum, Osborne and Mendel, in particular, have made clear how an "incomplete" protein may be supplemented by a small quantity of another protein so as to produce a more perfect combination than either portion alone could exhibit from the standpoint of nutritive efficiency. It is further doubtless possible to select a combination of two "incomplete" proteins so that the mixture will afford all of the amino-acids of an ideal diet. In such an instance two proteins of Lusk's inferior Group C might yield a very satisfactory ration.

This is essentially what Hart and Humphrey have experimentally demonstrated in actual feeding experiments on a large scale on cattle. Thus they found that with corn stover and corn meal as the basal ration there were very appreciable differences in the efficiency with which certain protein concentrates could supplement such a ration for milk production. Gluten feed, for example, was measurably inferior to casein or milk powder.[3] In the proportions used and with corn stover as the roughage, none of several concentrates tested was able to maintain the animals in nitrogen equilibrium. Gluten feed was particularly unfit. But when the roughage was changed from corn stover to clover hay, the corn kernel being maintained as the basal grain, the inefficiency of the gluten feed as a supplement disappeared.[2] Evidently, Hart and Humphrey write, the proteins of clover hay will supplement the proteins of gluten feed in a much more efficient manner than will those of corn stover. These results, they continue, emphasize in a striking way the limitations of any classification of natural food in respect to the efficiency of their proteins, based on the determination of such nutritive value in a single food material or single mixture. When they are used in mixtures, as they generally are, the efficiency may be very greatly modified by the supplementary materials. This applies to human as well as animal nutrition.

2. Hart, E. B., and Humphrey, G. C.: The Relation of the Quality of Proteins to Milk Production, III, Jour. Biol. Chem., 1917, **31**, 445.
3. Hart, E. B., and Humphrey, G. C.: Jour. Biol. Chem., 1916, **26**, 457.

Before condemning any particular type of protein or protein-rich food, it will be well to bear in mind that our dietaries usually are, or at any rate ought to be, drawn from varied sources unless we are certain of the adequate nutrient efficiency of the proteins supplied. The proposed classification of the proteins of foods into the Groups A, B and C, according to their physiologic value, has significance, as Hart and Humphrey insist, only so far as the individual food materials form the sole article of diet. In a mixture, Class A would probably always improve Class C; but it is possible to conceive of Class C proteins from independent sources making an efficient mixture. What applies to proteins is applicable in a somewhat comparable manner to other deficiencies in single sources of food. A suitable source of protein may lack desired inorganic elements or needed vitamins. Adequate nutrition is coming to be recognized more and more as a scheme dependent on the rational selection of suitable combinations of foods whereby their supplementary relationships can be duly exhibited.

THE IMPORTANCE OF FURTHER STUDY OF THE DIPHTHERIA GROUP OF BACTERIA

After the discovery by Loeffler and Hoffmann of an organism now known as *B. hoffmannii* or the pseudodiphtheria bacillus, morphologically identical with the diphtheria bacillus but seldom pathogenic and a nonfermenter of glucose, it was soon found that there was a whole group of diphtheroid organisms with slight morphologic and cultural differences, and identical with neither the true diphtheria bacillus nor *B. hoffmannii*. The intensive study of this group has never attracted investigators as it deserved, probably because of the general opinion that diphtheroids possess slight pathogenic powers and generally are secondary invaders. This opinion may be due to the fact that these organisms are so widespread, occurring in the air, in milk, and apparently at some time or other in nearly every organ of the body, normal as well as diseased. But their possible relation to Hodgkin's disease as indicated by the discovery of a diphtheroid (*B. hodgkinii*) in the lymph glands of this disease (Bunting and Yates and others) has reawakened interest in the whole group. In a recent review of the entire literature on diphtheroid organisms, Mellon[1] has conclusively shown that at times they may be the cause of various acute inflammatory processes. In many cases they are the only organisms isolated from such processes, and injection of suspensions of the killed organisms often seem to exert a marked benefit on the course of the disease. He cites cases, due to diphtheroid infection, of "tonsillitis, chalazion, acute and chronic purulent otitis media, arthritis, caseous and ulcerative lymphadenitis in cattle, bronchopneumonia, interstitial pneumonia, ulcerative cystitis, and an epizootic of infective abortion in guinea-pigs." He finds, too, that the difficulties encountered in correlating the work of various observers, and the multiplication of names and types are due not so much to differences in the bacteria themselves as to lack of uniformity in the mediums used in growing them and of well controlled immunologic studies. In many cases, reactions have been recorded by growth on glucose broth only. By the use of ten fermentable substances and a careful titration of the amount of acid formed in a definite period of time, and by the extensive study of immunologic reactions, especially complement fixation, Mellon thinks it is possible to divide diphtheroids into seven groups, four of which contain the greater number of saprophytes and three the greater number of pathogenic organisms, though any of the subgroups may become pathogenic under favorable conditions. One strain he found particularly interesting because of its pleomorphic character; under certain conditions of growth it assumed the form of a diplococcus, and it was only with great difficulty that it was brought back to the bacillary form. This relationship to the streptococcus was carried out in the immunologic reactions also, the relationship to some strains of streptococci being closer than to some strains of the diphtheroids.

The need for the further investigation of this particular sort of phenomenon is suggested also by Heinemann[2] in his report of a strain of diphtheria bacillus, otherwise typical, which on growth in glucose veal broth assumed a coccus form identical in morphology with the coccus form of Mellon's pleomorphic diphtheroid. This organism, however, could be easily reconverted into bacillary form by growth on Loeffler's blood serum.

THE LUNG PHENOMENA IN ANAPHYLAXIS

The phenomena of anaphylaxis have begun to play a prominent part in various departments of medicine. The anaphylactic nature of so-called serum sickness is now generally recognized, as it occurs as a direct consequence of the injection of a foreign protein into a human being. The analogy between asthma and anaphylaxis has been clearly set forth by Meltzer,[3] among others, who points out that in both conditions the symptoms consist in a tonic stenosis of the small bronchioles of peripheral origin. The connection of hay-fever with anaphylaxis is one of great likelihood, and current investigation is being guided in the direction of such probability. Zinsser[4] has remarked that there are a number of other clinical conditions which are less obviously anaphylactic in nature, but in which

1. Mellon: Jour. Bacteriol., 1917, **2**, 81.

2. Heinemann: Jour. Bacteriol., 1917, **2**, 361.

3. Meltzer, S. J.: Bronchial Asthma as a Phenomenon of Anaphylaxis, JOURNAL A. M. A., 1910, **55**, 1021.

4. Zinsser, H.: Infection and Resistance, New York, 1914, p. 433.

we have many good reasons for attributing an important part of the etiology to a state of hypersusceptibility. Thus the peculiar so-called "idiosyncrasies" observed in many people who suffer from urticarial skin rashes, gastro-intestinal difficulties, and even severe systemic illness after certain varieties of food seem to depend on an acquired or possibly inherited hypersusceptibility to the particular proteins involved, which, at certain times of abnormal gastro-enteric conditions, can get into the circulation in small quantity. It is not impossible, furthermore, that such unfortunate cases as the severe forms of angioneurotic edema, which seem, at least in part, to be associated with gastro-intestinal disturbance, and which may be transmitted from mother to child, have their root in anaphylaxis. For this, however, we have only inference based on clinical observation.

For the more accurate experimental study of the manifestations of anaphylaxis we are still restricted to observations on sensitive animals. In order to unravel satisfactorily the problems of clinical medicine in which the possibility of anaphylaxis can be considered, it is highly essential to continue the intensive investigation of the more purely experimental aspects of the subject. In some species, notably the very sensitive guinea-pig, the respiratory symptoms are the most striking feature of the clinical picture of anaphylaxis. During the later stages little or no air enters the lungs, although the animal makes violent respiratory efforts. This is due to a tetanic contraction of the small bronchioles which practically occludes the air passages. The conspicuous noncollapsible expansion of the lungs after death is due to the imprisonment of the air in the alveoli by the contracted musculature of the small bronchioles.

In the Department of Bacteriology and Experimental Pathology of the Leland Stanford Jr. University, Manwaring and Crowe[5] have found, through the study of isolated anaphylactic lungs by perfusion methods, that there are three types of pulmonary anaphylactic reaction, namely: (1) bronchial anaphylaxis, or the spasmodic contraction of the bronchial musculature, unassociated with recognizable changes in the pulmonary blood vessels; (2) vascular anaphylaxis, or the spasmodic contraction of the pulmonary blood vessels, usually accompanied with edema. The vascular reaction is usually followed by a mild bronchial reaction; (3) pseudo-anaphylaxis, or the plugging of the pulmonary blood vessels with thrombi and agglutinated corpuscle masses. Despite the seemingly technical character of such results, it is through investigations of precisely this sort, defining the mechanism underlying some of the conspicuous symptoms of anaphylaxis, that the understanding essential to progress in rational clinical therapy is to be derived.

5. Manwaring, W. H., and Crowe, H. E.: Types of Anaphylactic Reaction, Proc. Soc. Exper. Biol. and Med., 1917, **14**, 173.

Current Comment

HELPS TO THE SCOFFER AT FOOD VALUES

It is often said that necessity is the mother of invention; but necessity is also a good teacher in many other ways. In times of plenty we may be oblivious to the needs of the moment, whereas we soon learn to count the cost when "every little helps." Only a short time ago the earnest student of nutrition and dietetics was perenially twitted with the humor of the man who smilingly insisted that he wanted food, not calories. But times have changed, and the jokes about book learning and scientific feeding are replaced by an earnest desire for education in the tenets of nutrition. As Professor Bevier[1] of the Department of Household Science at the University of Illinois has aptly expressed the situation, with the shortage of food and the demands for saving it, there has come even to the mind of "the people" their helplessness because of their ignorance of food values. The people are writing to Washington, to the agricultural colleges, to anybody and to everybody for help in saving food. In response to this demand a great variety of helps to the housewife are appearing. Mr. Hoover's instruction card and the government devices are variations of lessons in food values. Every one understands perfectly that four quarters may take the place of one dollar in buying food, but many people cannot tell how many eggs at 40 cents a dozen may be used to replace in food value round steak at 25 cents a pound, or how to substitute for a quart of milk. It is easy even now to see that the term "food value" is beginning to receive respectful attention, and that way lies the basis for wise buying of food. War tends to make kindred of men. We can forgive the erstwhile scoffer, and we urge him to satisfy his newly acquired curiosity as to food values by consulting a timely series of well edited bulletins on "How to Select Foods," which the United States Department of Agriculture has lately put at the disposal of the public without cost.[2]

THE DANGER TO MUNITION WORKERS FROM TRINITROTOLUENE

Trinitrotoluene, or T. N. T., as it is commonly called, has been increasingly used abroad as a substitute for picric acid as a filler for shells, and is now used in America for that purpose. It has a lower melting point than picric acid, and is more stable; it is an explosive of the strength of nitroglycerin, and is manufactured by nitration from pure toluene. That it is dangerous to the human system we know from reports of necropsies in cases of fatal poisoning among trinitrotoluene workers, published recently in England and America; from the recent studies of cases of illness

1. Bevier, Isabel: An Experiment in Teaching Food Values, Jour. Home Economics, 1917, **9**, 415.
2. These are issued under the editorship of Caroline L. Hunt and Helen W. Atwater as Farmers' Bulletins. They are available for free distribution on postal card request to the Department of Agriculture at Washington.

among trinitrotoluene workers in England by Panton,[1] and from Alice Hamilton's[2] study of four or five plants in America in 1916 in which she found 703 cases of poisoning, with thirteen deaths. In the manufacture of trinitrotoluene itself there is little danger to the worker, the process being carried out in closed retorts. But in filling the shells with the molten material, the workers are exposed to the fumes; and in chipping off the solidified trinitrotoluene from the top of the shells and boring holes in them for the detonator, they are exposed to the yellow dust. Occasionally symptoms due to the irritant action on the mucous membranes are observed, such as epistaxis, smarting of the eyes, constriction of the throat, and dry cough with a yellow bitter sputum. The toxic symptoms, like nausea, vomiting, anorexia, jaundice, mental depression, blurred vision and transient peripheral neuritis, are probably due to the absorption of the fumes and dust through the respiratory and the digestive tracts and especially the skin. The action of the poison on the liver seems to be marked. At necropsy the liver shows the most striking changes, and of the thirty-four cases of illness among the workers Panton studied, twenty-eight were cases of toxic jaundice. The microscopic study of the liver shows fatty changes of the liver cells, and in some cases increased bile duct proliferation, with infiltration of small lymphocytes around the ducts. Further, Panton examined the blood of a hundred apparently healthy women in a trinitrotoluene factory, and found the serum of twenty to be bile tinged. He suggests that even in the absence of symptoms there may be slight damage to the liver in these cases. The blood and blood-forming organs also are probably affected, for eight of the thirty-four patients showed anemia. This anemia Panton regards as of the aplastic type, that is, an anemia in which the number of the red cells is reduced while their form remains unchanged. He thinks the anemia is due to a destruction of the red marrow; and though rare among trinitrotoluene workers, it seems to be always fatal. The evidence on this point is still fragmentary, and needs for confirmation a careful study of the blood in more cases of poisoning, and further animal experiments.

1. Panton: Effect of Trinitrotoluene on Blood, Lancet, London, 1917, **2**, 77.
2. Hamilton, Alice: Trinitrotoluene Poisoning, Med. and Surg., 1917, **1**, 761.

PRIMARY PHLEGMONOUS GASTRITIS

Within the last few years the subject of phlegmonous gastritis has been investigated from various points of view, and reports of cases of this disease are now not infrequent. It would seem that the former lack of familiarity with the condition was due not wholly to its rarity, but in part to failure of recognition. The number and completeness of recent reports serve not only to stimulate the general interest in the subject, but also to increase greatly our knowledge of its various phases. Thus it now seems clear that the disease unquestionably belongs among the numerous manifestations of streptococcal infection. Phlegmonous gastritis may be superimposed on a chronic ulcer or carcinomatous process in the stomach, and in such case it may become the immediate cause of death. Of great interest are the cases in which the infection follows or accompanies an acute streptococcal process elsewhere, and especially noteworthy are the comparatively few cases in which the process in the stomach is the only focus of infection as far as the examination discloses. It is the latter group of cases that is most baffling; here the mode of entrance of the streptococci is often a matter of conjecture. Emge[1] described a case of this kind, but makes no suggestion as to the route by which the infection may have taken place. According to Emge, the streptococcus is the sole infecting organism in 70 per cent. of the reported cases of primary phlegmonous gastritis, and in the remaining 30 per cent. it is associated with the staphylococcus, the colon bacillus or the pneumococcus. The chief associated and probably predisposing conditions are alcoholism, dietetic errors, and food and drug poisoning. Streptococcus gastritis occurs five times more frequently in the male than in the female sex, and so far half of the cases have been found in laborers. Rixford[2] reports four cases, three of which occurred during the epidemic of streptococcal sore throat in San Francisco last winter. In such cases there seems no difficulty in accounting for the source of infection. The symptoms are sudden, severe from the onset, with a burning sensation in the stomach which is not relieved by drinking fluids, persistent vomiting, fever, not high at first but gradually or rapidly rising to 102 F. and occasionally to 105 or 106, and early prostration. The disease runs a rapid course, from three to ten days, and is usually fatal. The stomach wall is much increased in thickness and feels boggy, the mucosa is pale and swollen, and the folds are absent or indistinct. The mucous membrane is generally intact, but may be perforated or even entirely necrotic if the process has continued for some time. The submucous coat is greatly increased in width, often to the extent of half an inch, and firm, while the serosa is generally unchanged, but may be covered with a film of fibrin. There is an infiltration of leukocytes in the mucosa, but ordinarily the glands appear normal. There is a huge exudate of fibrin and leukocytes, both mononuclear and polymorphonuclear, in the submucosa, which is the part chiefly affected. The muscularis may be swollen and infiltrated with round cells, although generally little changed. As indicated, streptococci are easily demonstrable in the exudate.

1. Emge: Tr. Chicago Path. Soc., 1913-1915, **82.**
2. Rixford: Ann. Surg., 1917, **66**, 325.

Mortality Rates Among Negro Babies.—In analyzing the infant death rate for 1915, it was ascertained that while the infant death rate for New York City was 98.2 per thousand births, the infant mortality of the colored race was 202, as against 96.2 for the whites, a difference of 110 per cent. The health department then started an educational campaign, instituting intensive work along the lines usually found effective in reducing the infant death rate, and has just made public the results. While the negro death rate among babies in 1915 was 202, in 1916 it was 193.3 per thousand children born, and for the first six months of 1917, the rate was still further reduced to 180 per thousand births.

Medical Mobilization and the War

THE FULL SACRIFICE

♣ ♣ *Our country is at war. Men are called according to their talents and training to enter the different branches of the service. Physicians occupy an important place, and this applies particularly to those of special training. No choice has been left to youth because its strength and enthusiasm are called by the state. Men of maturer age have the glory of choice. They choose to serve or to let others serve.* ♣ ♣ *For the moment the enemy is at a distance, and those without imagination see him always there. Because disaster is still without our gates we feel secure. Many, therefore, are putting off the day of service. Some hesitate and question: a few even bargain.* ♣ ♣ *To relinquish individual liberty causes not a few to hold back. Yet those who have made the decision and are now doing the duties assigned to them as well as they may, cherish as dearly as the heart can the liberty to be with wife and family, to continue to engage in private or public practice, to carry on their investigations, to teach in hospital or medical school, and to provide for their old age.* ♣ ♣ *The right to these blessings of peace belongs to no one man. Some there are, however, who by actions or words seem to claim a right to these blessings over their brothers.* ♣ ♣ *No work is too trivial in a cause so sacred. Some have thought otherwise. But whoever is above the work which naturally falls to him, and works, if at all, only with reservations, misses the finest inspiration that duty fully done can supply.* ♣ ♣ *He who consciously or unconsciously allows self to decide in this matter is not to be envied. The spirit of service, which, if allowed, would almost transfigure him, he has failed to grasp. Greater peace can no man have than he who has made the full sacrifice.*

Commissioning of Medical Reserve Officers

The chief of staff of the Army has given instructions to the Adjutant-General that no more commissions are to be issued in any branch of the military service until a complete check is made of the number of commissioned reserve officers on the rolls. It is expected that this will hold up all the appointments for at least three, and possible four, weeks. Hence physicians who have applied for commissions must not be disappointed if they do not hear regarding them for the period mentioned.

Number in Medical Reserve Corps

On October 12, there had been recommended for commissions in the Medical Officers Reserve Corps approximately 17,500 physicians. About 1,200 of these finally declined to carry out their declared intention to accept commissions, and a few over 200 officers have been discharged for one cause or another, most of them because of physical disqualifications. Slightly over 13,500 have accepted their commissions. This number does not include, of course, the officers of the regular medical corps and of the medical corps of the National Guard, over 2,000 in all.

During the week ending Oct. 13, 1917, there were recommended for commissions in the Medical Reserve Corps 402 physicians, the proportion being seven majors, eighty-nine captains and 306 lieutenants.

Competition Increases

Capt. S. T. Millard, M. R. C., U. S. Army, Topeka, Kan., writes that Topeka has a better record than Sioux City (THE JOURNAL, Oct. 6, 1917) so far as physicians volunteering for the Medical Reserve Corps is concerned. With a population of 50,000 and eighty physicians, twenty-four physicians have volunteered for service.

Conference of Examiners for Medical Reserve Corps

At a meeting of the examiners for the Medical Reserve Corps, held at Fort Benjamin Harrison on October 8, a national association was formed with the title of the National Association of the Presidents of the Boards for the Examination of Applicants for Appointment in the Medical Reserve Corps of the United States Army. The following officers were elected: president, Capt. George N. Kreider, Springfield, Ill.; vice president, Major Robert D. Maddox, Cincinnati; secretary, Major Fred W. Bailey, St. Louis. An adjourned meeting will be held at the Congress Hotel, Chicago, Monday, October 22, at 3 p. m.

Creating a Dental Corps in the Army

By concurrence of the House in Senate amendments to House Bill 4897 in the closing hours of Congress, October 6, a Dental Corps has been created in the Army, corresponding to the Medical Corps, the membership of which shall have the rank, pay, promotion and allowance of officers of and shall be of the corresponding grade of the Medical Corps. Chairman Dent of the House Military Committee explained that the House bill relating to members of the Dental Service of the Army corresponded to the section of the national defense law which waived the former requirement of the law of five years' previous service in the Army as lieutenant before a member could be promoted to the next higher rank, and so on for the higher grades. The Senate practically adopted the House bill with the material amendment that a Dental Corps be created in the Army. Heretofore, the highest rank a member of the dental service could attain was that of major, and it would require twenty-four years of service before he could obtain that rank. At present the highest officers in the Army dental service have the rank of captain.

AMERICAN ASSOCIATION OF MILITARY SURGEONS

(*Continued from page 1273*)

Meeting at Fort Benjamin Harrison

The second day of the convention was opened by the president, Surg.-Gen. Rupert Blue. The first speaker of the session, Col. T. H. Goodwin, British Medical Service, dealt with the subject of the "Personnel of the British Army." The current of the thought in his address was sportsmanship, as illustrated by a favorite phrase of Colonel Goodwin's—*esprit de corps.* This he illustrated by many personal experiences with his troops. An officer and three of the enlisted sanitary personnel were in "No Man's Land" (called by Colonel Goodwin "Our Land," now that the British Army is gaining with every "show"), assembling the wounded, when a gas alarm sounded. This detachment was assisting in a particularly bad case at this time, and the wounded officer had no mask. It happened that between the officer and his three assistants there were only two masks all together. After each had refused, even when ordered to don a mask, one was finally put on the wounded man. The result was that later the wounded man was brought in alive, but the officer and his three men were found dead. That is playing the game, even though it is bad from a military standpoint, when four good men are lost to save one wounded, who may be permanently out of the war. Colonel Goodwin labeled as malicious lies the stories that the British Army is killing the wounded in the conquered trenches. "Quite the contrary," he said; "we make particular efforts to get them back to the dressing stations behind our lines." He said, "It will be this *esprit de corps,* which is such a dominant characteristic of the English-speaking people, that will win in this war, and never again will these peoples be separated, so long as the world lasts."

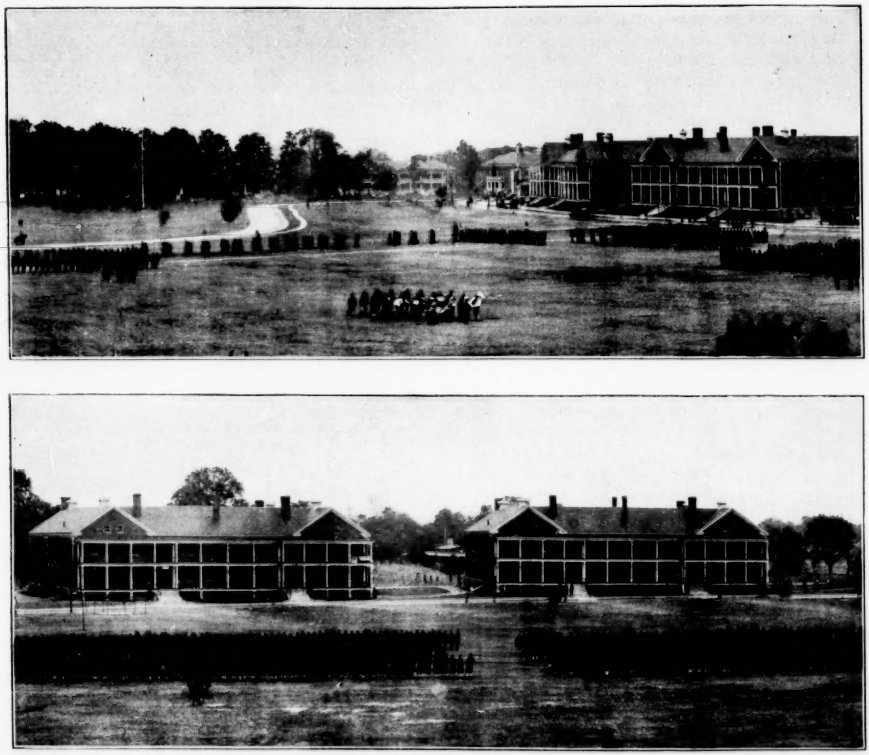
The next speaker, Capt. J. Gilmour, R. A. M. C., a veteran of many campaigns, though a young man, addressed the convention on the "Transportation of the Wounded on the Western Front." The address was extremely technical, but interesting to military men. The comparison of the British methods with those of our own Army shows that the United States has followed the British Army Sanitary Service Manual quite closely in writing its own. The scheme is illustrated by this outline: (1) Man transportation, by which the wounded man is carried on the bearer's back, or other scheme to get him back in the quickest and safest manner possible; (2) man transportation, with the use of litters and other apparatus not on wheels; (3) conveyances on wheels, drawn by men; (4) on animals' backs, mules, horses, etc.; (5) conveyances on wheels drawn by animals; these have been largely supplanted by motors; (6) railroad transportation; (7) water transportation. Captain Gilmour modestly remarked on the dryness of his topic, but followed the example of the other speakers, with a story of a personal experience.

Prisoners were coming in after a particularly hard "show." Among them was a German officer. "I asked this officer, who was down on his luck and who spoke perfect English," said Captain Gilmour, "what he thought of the British charge. In reply, I learned that it was not much. He told me that our artillery fire was only fair. I finally asked him what he thought of the fact that the Americans had come in. He straightened up and said, 'That's bad. Now we have brains against us.'"

The "medics" of the Medical Officers' Training Camp took the point personally, and cheered wildly.

ADDRESS OF SURGEON BAINBRIDGE

Surg. William Seaman Bainbridge, U. S. Navy, spoke on "Reconstruction of the Crippled," and applied the subject to the reconstruction of the nations after the war. "I believe," said the speaker, "that the entrance into the war of my country means a better civilization for the future. I know that the people of Germany are heart and soul behind the kaiser in the war, and that the German women would drive the men back to the battle front if they showed any signs of weakening."



PARADE AND REVIEW OF THE MEDICAL OFFICERS' TRAINING CAMP, FORT BENJAMIN HARRISON, INDIANA, OCTOBER 8. IN THIS REVIEW THERE PERMANENT BARRACKS. IN ORDER TO PERMIT REPRODUCTION THIS PANORAMIC VIEW HAS BEEN CUT INTO FOUR PARTS; THE FOUR ILLUSTRATIONS,

FIELD MANEUVERS

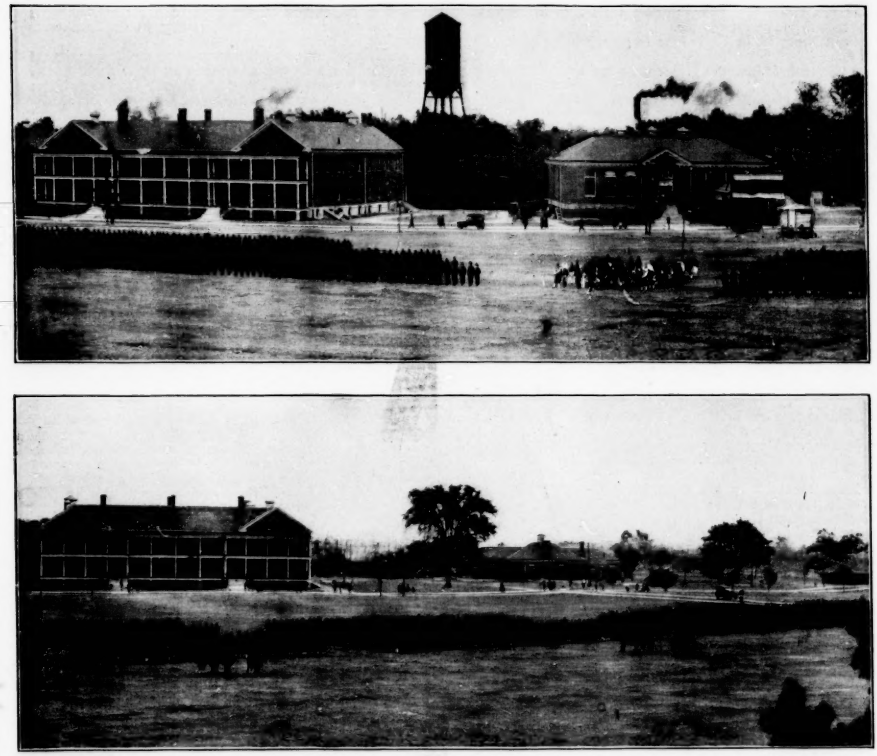
The afternoon was devoted to practical demonstrations of field maneuvers by sanitary troops. These were explained by Lieut.-Col. M. A. W. Shockley, M. C., U. S. Army. The maneuvers were in the form of a terrain exercise, in which a position of opposing forces was assumed, and casualties estimated and placed on the terrain and tagged. Under these assumed conditions the surgeons of the various combatant organizations were required to issue orders and manage their organizations and establishments in accordance with the principles of sanitary tactics. The sanitary troops had established the necessary regimental aid stations, dressing stations, ambulance stations and field hospitals.

The convention, about 2,000, hiked to the trenches with the U. S. Army instructors and the distinguished guests from our

Allies. The dressing stations were established in ravines, in shelter, at the head of the sanitary line to the evacuation hospital. These stations consisted of tent shelters, to which the wounded were brought by the sanitary privates on litters, and in which they received first aid. From these stations the wounded were transported by mule ambulances to field hospitals, where they were given temporary treatment, consisting mainly of dressing adjustment. On account of the necessity of the mobile units accompanying the commands to which they were attached, the near approach of the enemy required that the wounded be evacuated to the base hospital as rapidly as possible. This movement was executed in a rapid manner, and the patients were transported to the rail-

"War Neuroses." "I think," said Dr. Salmon, "that shell shock is purely a neurosis and has no organic basis, but is founded on fear or horror. Early in the war these patients were treated in England by pampering and rest, with an insignificant number of recoveries. Since the establishment of the definite etiology, suggestion, persuasion and hypnosis have restored many to the battlefields." By elimination, wounded men and prisoners being used for the study of the condition, it was found that only twelve definite cases of shell shock had occurred among 60,000 prisoners. A correct deduction is simple.

The convention was closed on the third day by an interesting address by Col. T. H. Goodwin, British Medical Ser-



WERE ASSEMBLED OVER 1,200 MEDICAL OFFICERS AND ABOUT 2,000 ENLISTED MEN OF THE MEDICAL DEPARTMENT. IN THE BACKGROUND ARE THE THEREFORE, MUST BE REGARDED AS A CONTINUOUS PICTURE, READING FROM LEFT TO RIGHT.

way hospital train brought from the base to a nearby station.

The visitors not only obtained a vivid picture of the work as done in actual battle, but also had the advantage of most interesting explanation by Lieutenant-Colonel Shockley.

ADDRESS BY COLONEL DIRCLE

In the evening, Col. Charles Dircle of the French Army exhibited moving pictures of the "Medical Service on the Western Front." It was an inspiration to hear him speak of France. His reverance for his country and his devotion to it were stimulating and worthy of emulation.

ADDRESS OF MAJOR SALMON

Major Thomas H. Salmon, M. R. C., U. S. Army, detailed to the Surgeon-General's Office, illustrated his address on

vice, followed by the installation of the following officers: president, George A. Lung, Medical Director of the Navy; vice presidents, Lieut.-Col. Henry Allers, N. G., New Jersey; Brig.-Gen. Henry P. Birmingham, M. C., U. S. Army, and Asst. Surg.-Gen. J. S. Kerr, U. S. P. H. S.; secretary, Col. Edward Munson, M. C., U. S. Army (reelected), and treasurer, W. C. Rucker, U. S. P. H. S.

RESULTS OF THE MEETING

The holding of this meeting at one of the great officers' instruction camps has aided materially in impressing on the visitors the great need of thorough application for the attainment of technical knowledge of military affairs. The students in the medical camp also have profited immensely by personal contact with the guests, many of whom have been in actual campaigns within the war zone.

NEWS OF THE CANTONMENTS

[From Our Special Correspondents]

Thirty-First Division, Camp Wheeler, Macon, Ga.

The school of sanitation and medicomilitary tactics is progressing. Sessions are held four afternoons in each week; on Wednesday the officers of the mounted organizations take a ride into the country. These rides are a combination of pleasure, practice in riding, and instruction in topography and field work. Complete problems will be taken up soon.

NOTES

Major Harrold has secured medical officers to fill his compliment with the 121st Infantry.

Colonel Fisher of the Surgeon-General's Office inspected the camp, October 8. He appeared surprised to find a new motor ambulance company here.

Captain Pratt, M. R. C., is here to give instruction in gas defense.

The tuberculosis board is progressing rapidly; likewise the board on disease of the heart and that on mental diseases.

The base hospital will open about October 15, with some 250 patients.

The men of the ambulance companies are putting in an underground first-aid station close to the firing trench of the trench system now under construction. It will be fitted up as if for actual use, and used for instruction in gas defense.

As the division is now being filled up with draft men the sanitary units and detachments will also be filled. All units have already been organized, but there is a shortage of medical officers.

Capt. William A. Padgett of the Alabama National Guard has been promoted to major.

BASE HOSPITAL NOTES

The officers' quarters were completed, October 4, and promptly occupied. After several weeks in tents, the individual rooms were properly appreciated.

The administration building, receiving ward, two single ward buildings, laboratory building and operating pavilion are all practically complete, with the exception of electrical connections. The first is now being occupied by the administrative staff; intensive training and instruction is being given the enlisted personnel in order that they may be quite ready for their duties when we begin to receive patients, Wednesday next.

Lieutenant Horne, M. R. C., is now convalescent, following an operation for appendicitis.

Capt. Samuel C. Baker, M. R. C., specialist in brain surgery, reported for duty, October 10, and Capt. Francis R. Lyman, M. R. C., specialist in plastic surgery of the head, on October 11, thus probably completing the personnel of the staff.

ONE HUNDREDTH AND SIXTH SANITARY TRAIN

The camp hospital has still averaged 270 patients and great interest is taken by the local Red Cross in providing comforts. The meeting of the Red Cross, October 12, will surely be productive of added comforts.

Dr. Snavely of Atlantic, national director of the Red Cross, visited the camp hospital, October 12, and was greatly pleased with conditions.

The weekly social and dance took place Wednesday, and a most enjoyable time was had by all. Many visiting officers and ladies of Macon attended. Coffee and sandwiches à la buffet were served. Music was furnished by the Florida Field Hospital Orchestra.

The sanitary train is now being conducted as a regiment with its battalions of field hospital and ambulance companies. A supply organization is making its need felt.

The sick rate is dropping steadily.

Major George C. O'Connell, Alabama, has reported from leave of absence, and is now on full duty.

Col. Thomas Herbert Goodwin, C. M. G., D. S. O., of the British Army, assigned to the Surgeon-General's office of the United States Army.

Lieut. Edward S. Byrd of the (Georgia) Field Hospital No. 122, about to enter the ranks of the benedicts, is receiving the congratulations of brother officers. The lady is Miss Lucy B. Boyd of Enterprise, Ala.

Eightieth Division, Camp Lee, Petersburg, Va.

CONSTRUCTION OF BASE HOSPITAL

The past two weeks have witnessed rapid progress in the construction of the base hospital which although not completed, has received a large number of patients. The number, however, has been comparatively small, and has consisted largely of minor cases which could not be cared for in the regimental infirmaries. The staff has been working under difficulties owing to delay of manufacturers in sending equipment and a large part of the time of the staff has been occupied in making special examinations in doubtful cases shortly after the arrival of the drafted men.

The majority of the enlisted men are new and inexperienced in nursing, and the arrival of sixteen trained female nurses during the past week will insure better care for the patients. One woman arrived in camp alone, the first woman to stay here over night. What Major Hope christened her can readily be imagined. Congratulations are in order for Capts. J. Bayard Clark, M. R. C.; Ewing B. Day, M. R. C., and Samuel B. Moore, M. R. C., who now wear their well deserved gold oak leaves. There have been a few changes in the staff, as the following men have been transferred from duties in the division to assignments in the base hospital: Lieuts. A. C. Butcher, M. C. Campbell, A. J. Colborn, W. J. Davies and William F. Davison, all of the M. R. C.

The staff are comfortably quartered in the receiving ward and now have their own mess, and since Captain Merritt has had charge of it he is more popular than ever. Major Clark has been assigned to the work of supervising the care and prevention of venereal diseases in the division, and has devised a most satisfactory wash stand similar in shape to a urinal for the purpose of administering venereal prophylaxis. These stands are now being made and will shortly be installed. A prophylaxis station has been opened in Petersburg, and treatments are now given within a very short time after the men have exposed themselves to infection.

PSYCHOLOGIC EXAMINATIONS

One of the most interesting and novel experiences which the medical officers have had at Camp Lee was the psychologic examination which was given by the ten psychologic examiners stationed here to examine the troops, under the direction of Lieut. Clarence S. Yoakum of the Sanitary Corps. Lieutenant Yoakum is professor of psychology in the University of Texas, and he and his assistants are well known in the field of practical applied psychology. The medical officers were examined at the request of Lieut.-Col. T. L. Rhoads, the division surgeon, with the hope that the examination would indicate in a general way the comparative adaptability of the different men.

The examinations were not difficult, but called for the alertness and accuracy so essential for a good soldier. No man can make a successful soldier or officer unless he grasps the actual meaning of his orders and knows how to obey them with precision and dispatch. The tests that were given rank the men on such qualities as these and, at the same time, rank them quite accurately on general intelligence. Tests have already been given to men of the regular Army and the results compare, in a high degree, with the estimates of the men made by the officers themselves. The gradings given compare quite accurately with the provisional estimate of the men made by Lieut.-Col. Rhoads and Major Schmitter. The results of the examinations of medical officers are very interesting. The base hospital physicians rank first, the regimental surgeons second and the Dental and Veterinary Corps,

third and fourth. It is perhaps only fair to say that there were relatively few of the last two groups, so that their rankings are necessarily less accurate than the others. It required a staff of almost 100 men to give the tests and score and record the results. The tests created much comment and were enjoyed by the men as much as an interesting game would be.

EARLY DUTIES

The medical officers of the regiments have had their time very largely occupied in examining recruits, administering "triple typhoid" vaccine and learning their routine duties, and it has not as yet been possible to organize the sanitary personnel of the regiments and begin their formal instruction. This will begin shortly.

SANITARY TRAIN

The sanitary train under the direction of Capt. Elliott B. Edie, M. R. C., has been able to start systematic instructions. Lieut. Burr Ferguson, now Captain Ferguson, has been appointed instructor of ambulance companies by Colonel Hamilton, the commander of the trains, and work has been commenced. Drill, instructions and first aid will occupy most of the time during the first few weeks. The ambulance companies have been rechristened. Ambulance Company A, organized at Fort Oglethorpe, Ga., becoming No. 318; No. 43, organized by the Red Cross of Raleigh, N. C., is now No. 317, and Ambulance Company No. 46, organized by the Red Cross of Richmond, Va., is now No. 319. Odd numbered companies are motor drawn and even numbered companies animal drawn.

PAPER WORK

After the first quota of troops are examined this week the real work for the winter will begin, for which the regimental officers are all eager. Paper work is losing its terror and is gradually becoming comprehensive and easy.

HEADQUARTERS GOSSIP

The sanitary office, the headquarters of the division surgeon, is one of the busiest offices in the division, and Colonel Rhoads has already earned a reputation for industry and fairness. One of the assistants in the office, Capt. Hugh T. Nelson, Charlottesville, Va., quietly asked for a pass over Sunday and arrived back Monday morning but preceded by the announcement of his marriage to Miss Edith Rankin of Richmond, Va., on October 6. Captain Nelson is the only war bride among the medical officers since Camp Lee has opened.

Col. Percy M. Ashburn and Surg.-Gen. William C. Gorgas at the Medical Officers' Training Camp, Fort Benjamin Harrison, Indiana.

THE DIVISION OF INTERNAL MEDICINE OF THE SURGEON-GENERAL'S OFFICE

The following is a list of physicians—internists—who have been appointed chiefs of the medical service in the great hospitals connected with the cantonments of the National Army and the National Guard. It is a guaranty of the high character of the professional work that will be done in them, and of the care that the sick soldiers will receive during their training. It is also an index of the patriotism of the best men in the medical profession:

CHIEFS OF MEDICAL SERVICE, CAMP HOSPITALS

NATIONAL ARMY

CAMP DEVENS, AYER, MASS., Maj. Joseph H. Pratt, Boston, Mass., instructor in medicine, Harvard University Medical School; assistant visiting physician, Massachusetts General Hospital.

CAMP UPTON, YAPHANK, LONG ISLAND, NEW YORK, Maj. Harlow Brooks, New York City; professor of clinical medicine, New York University Medical College; visiting physician, City Hospital.

CAMP DIX, WRIGHTSTOWN, N. J., Maj. David Bovaird, New York City; assistant professor of clinical medicine, College of Physicians and Surgeons, Columbia University; visiting physician, Presbyterian Hospital.

CAMP MEADE, ADMIRAL, MD., Maj. Nellis B. Foster, Ann Arbor, Mich., professor of internal medicine, University of Michigan Medical School.

CAMP LEE, PETERSBURG, VA., Maj. Lawrence Litchfield, Pittsurgh, Pa., practicing physician and consultant.

CAMP JACKSON, COLUMBIA, S. C., Maj. W. W. Herrick, New York City, associate in medicine, College of Physicians and Surgeons, Columbia University, chief of clinic in medicine, Vanderbilt Clinic; assistant attending physician, Roosevelt Hospital.

CAMP GORDON, ATLANTA, GA., Maj. Eugene E. Murphey, Augusta, Ga., professor of medicine, Medical Department, University of Georgia.

CAMP SHERMAN, CHILLICOTHE, OHIO, Maj. Dudley D. Roberts, Brooklyn, N. Y., clinical professor of gastro-enterology, Long Island College Hospital; visiting physician, Brooklyn Hospital.

CAMP TAYLOR, LOUISVILLE, KY., Maj. Walter W. Hamburger, Chicago, Ill., assistant professor of medicine, Rush Medical College, University of Chicago; visiting physician, Michael Reese and Cook County hospitals.

CAMP CUSTER, BATTLE CREEK, MICH., Maj. Ernest E. Irons, Chicago, Ill., assistant professor of medicine, Rush Medical College, University of Chicago; visiting physician, St. Luke's and Cook County hospitals.

CAMP GRANT, ROCKFORD, ILL., Maj. Joseph A. Capps, Chicago, Ill., associate professor of medicine, Rush Medical College, University of Chicago; visiting physician, St. Luke's and Cook County hospitals.

CAMP PIKE, LITTLE ROCK, ARK., Maj. Arthur A. Small, Chicago, Ill., instructor in medicine, Rush Medical College, University of Chicago; visiting physician, St. Joseph's Hospital.

CAMP DODGE, DES MOINES, IOWA, Maj. Joseph L. Miller, Chicago, Ill., associate professor of medicine, Rush Medical College, University of Chicago; visiting physician, Presbyterian and Cook County Hospitals.

CAMP FUNSTON, FORT RILEY, KANSAS, Maj. Andrew MacFarlane, Albany, N. Y., clinical professor of medicine, Albany Medical College, Union University; visiting physician, St. Peter's Hospital.

CAMP TRAVIS, FORT SAM HOUSTON, TEXAS, Maj. Herbert C. Moffitt, San Francisco, professor of medicine, University of California; physician to University Hospital.

CAMP LEWIS, AMERICAN LAKE, WASHINGTON, Maj. Calvin S. White, Portland, Oregon, assistant professor of medicine, University of Oregon, Medical School; health officer, Portland.

NATIONAL GUARD

CAMP GREENE, CHARLOTTE, N. C., Maj. Francis W. Palfrey, Boston, Medical School; assistant visiting instructor in medicine, Harvard physician, Boston City Hospital.

CAMP WADSWORTH, SPARTANBURG, S. C., Maj. Llewellyn Sale, St. Louis, Mo., instructor in medicine, Washington University Medical School, St. Louis; visiting physician, St. Louis City Hospital.

CAMP HANCOCK, AUGUSTA, GA., Maj. Frederick J. Barrett, New York, adjunct professor of medicine, Post-Graduate School of Medicine, New York; visiting physician, Post-Graduate Hospital, New York.

CAMP MCCLELLAN, ANNISTON, ALA., Maj. William H. Robey, Jr., Boston, Member of Faculty of Harvard Medical School; visiting physician, Boston City Hospital.

CAMP SEVIER, GREENVILLE, S. C., Maj. Edward H. Goodman, Philadelphia, associate in medicine, University of Pennsylvania; visiting physician, Presbyterian Hospital, Philadelphia.

CAMP WHEELER, MACON, GA., Maj. Richard Weil, New York, professor of experimental medicine, Cornell University Medical School; adjunct visiting physician, Mount Sinai Hospital, New York.

CAMP MCARTHUR, WACO, TEXAS, Maj. Oliver H. Campbell, St. Louis, visiting physician, St. Louis City Hospital, St. Louis; assistant in medicine, Washington University Medical School.

CAMP LOGAN, HOUSTON, TEXAS, Maj. Josiah N. Hall, Denver, professor of medicine, University of Colorado.

CAMP CODY, DEMING, N. MEX., Maj., William S. Bigelow, Boston, physician and consultant.

CAMP DONIPHAN, FORT SILL, OKLA., Maj. Sidney Strauss, Chicago, assistant professor of medicine, Rush Medical College, Chicago; assistant attending physician, Michael Reese and Presbyterian hospitals, Chicago.

CAMP BOWIE, FORT WORTH, TEXAS, Maj. James C. Greenway, New Haven, Conn., director of department of medical supervision, Yale University, New Haven, Conn.

CAMP SHERIDAN, MONTGOMERY, ALA., Maj. James S. McLester, Birmingham, Ala., professor of medicine, Graduate School of Medicine, University of Alabama; physician in chief, Hillman Hospital.

CAMP SHELBY, HATTIESBURG, MISS., Maj. George H. Lathrope, Morristown, N. J., attending physician, Morristown Memorial Hospital.

CAMP BEAUREGARD, ALEXANDRIA, LA., Maj. Birnie J. Guthrie, New Orleans, La., professor of clinical medicine, Tulane University.

CAMP KEARNEY, LINDA VISTA, CALIF., Maj. Philip S. Chancellor, Santa Barbara, Calif., practicing physician and consultant.

BASE HOSPITALS

FORT MCPHERSON, Maj. C. N. B. Camac, New York, assistant professor of clinical medicine, College of Physicians and Surgeons, Columbia University, New York; director of medical service, Gouverneur Hospital, New York.

FORT DES MOINES, Maj. Herbert H. Frothingham, Chicago, practitioner of medicine and consultant.

FORT MCHENRY, Capt. J. Albert Chatard, Baltimore, Md., instructor in clinical medicine, Johns Hopkins Medical School, Baltimore, Md.

DIAGNOSIS OF CARDIOVASCULAR DISEASES

In addition to these, assistants have been assigned to the various hospitals, with special training in modern methods of diagnosis and treatment of cardiovascular diseases, and after a period of special instruction with Dr. Alfred E. Cohn in the Rockefeller Institute, as follows:

Capts. Harold W. Stevens, Pittsburgh; Albert Vander Veer, Jr., New York City; James Howard Agnew, Mobile, Ala.; and Henry Rose Carter, Jr., Baltimore; Lieuts. Julien E. Benjamin, Cincinnati; Hugh K. Berkley, San Francisco; Ernest P. Boas, New York City; James H. Brown, Colorado Springs, Colo.; Carl R. Comstock, Saratoga Springs, N. Y.; W. L. Freyhoff, Cincinnati; Charles D. Giddings, New York City; Alpheus F. Jennings, Detroit; Berton Lattin, New York City; Frank B. Lusk, Chicago; Willard D. Mayer, Detroit; William J. Kerr, San Francisco; Louis H. Nahum, New York City; Harold E. B. Pardee, New York City; Edward J. Riley, New York City; Orville F. Rogers, Jr., Dorchester, Mass.; Truman G. Schnabel, Philadelphia; S. Calvin Smith, Philadelphia; F. Janney Smith, Detroit; Thayer A. Smith, New York City; Arthur E. Strauss, St. Louis; Francis C. Tyng, Salt Lake City.

SPECIAL EXAMINERS AND CONTRACT SURGEONS

Since July, special examiners, selected because of their experience and diagnostic skill, have been conducting the examination of the troops in the reserve officers' training camps, reorganization camps of the regular Army and of the National Guard when assembled for mustering into the federal service in the larger cities, and are now at work in the thirty-two cantonments of the National Army and the National Guard. Many of them are teachers of medicine and physicians to important hospitals, who could not accept commissions because of this obligation, and have patriotically volunteered as contract surgeons. Others, beyond the age limit for commission in the corps, have embraced this opportunity of rendering a service to the country with only the rank and pay of a first lieutenant, to which contract surgeons are entitled. Their names make it certain that so far as it is humanly possible no man will be forced to undertake military service whose health will be thereby endangered; and no man will escape service who is not suffering from actual disease of the heart or vessels. A list of these cardiovascular examiners follows:

Majors *David Boviard, New York City; Thomas D. Coleman, Augusta, Ga.; *Lewis A. Conner, New York City; James C. Greenway, New Haven, Conn.; Josiah N. Hall, Denver; W. W. Hamburger, Chicago; Walter A. Jayne, Denver; Herbert C. Moffitt, San Francisco; and Roger S. Morris, Cincinati.

Capts. James H. Agnew, Mobile, Ala.; Ralph C. Brown, Chicago; *S. L. Cash, New York City; *Joseph A. Chatard, Baltimore; Jule B. Frankenheimer, San Francisco; *Milton H. Fussell, Philadelphia; Cary Gamble, Baltimore; *William J. Hammer, New York City; Alpheus F. Jennings, Detroit; Oscar E. Lademann, Milwaukee; *John J. McClellan, Chicago; B. S. Oppenheimer, New York City; Ross V. Patterson, Philadelphia; Henry L. Smith, Baltimore; *Gerald B. Webb, Colorado Springs, Colo.; *Gordon Wilson, Baltimore, and Charles C. Wolforth, Philadelphia.

Lieuts. *James R. Arneill, Denver; Hugh K. Berkley, San Francisco; *Thomas F. Ellis, New York City; *Hermann Elwyn, New York City; *Augustus Eshner, New York City; *Harvey M. Ewing, Montclair, N. J.; William J. Kerr, San Francisco; *John T. Kling, Jr., Baltimore; *Geza Kremer, New York City; *Frank McLean, New York City; John H. Musser, Philadelphia; *David Reisman, Philadelphia; *Henry C. Thacher, New York City; Thayer A. Smith, New York City, and Frank N. Wilson, St. Louis.

Contract Surgeons Vanderpoel Adriance, Williamstown, Mass.; Arthur P. Beifeld, Chicago; Worth N. Brown, Baltimore; *F. R. Burke, Boston; *E. A. Burnham, Boston; Glentworth R. Butler, Brooklyn; Robert J. Carlisle, New York City; Thomas A. Claytor, Washington, D. C., *A. T. Downing, Boston; Frederick T. Fahlen, St. Louis; Harold Feil, Cleveland; *Cleveland Floyd, Boston; *W. B. Ford, Milwaukee; Hugo A. Freund, Detroit; Alfred Friedlander, Cincinnati; Joseph C. Friedman, Chicago; Lewis Fox Frissell, New York City; James H. Gibbes, Columbia, S. C.; Charles L. Greene, St. Paul; *Harry W. Goodall, Boston; T. Stuart Hart, New York City; George S. Hill, Boston; Tasker Howard, Brooklyn; William E. Hughes, Philadelphia; Henry Jackson, Boston; Thomas S. Lee, Washington, D. C.; Donald Macomber, Boston; *J. D. Madison, Milwaukee; *H. D. McCarty, Baltimore; Louis Mendelsohn, Boston; *G. R. Minot, Boston; *T. J. Murphy, Boston; *Lawrence T. Newhall, Boston; *Edward O. Otis, Boston; *Arthur J. Patek, Milwaukee; Peter J. Pothuisje, Denver; Thomas I. Simonton, Pittsburgh; Willard J. Stone, Toledo; *W. P. Stubbs, Baltimore; *Lawrence G. Sykes, Milwaukee; Arnold S. Taussig, Denver, and J. Gurney Taylor, Milwaukee.

MEN UNDER HALF-TIME CONTRACT

Doctors George Bachmann, Atlanta, Ga.; George S. Bond, Indianapolis, *Cary Eggleston, New York City; *Howard H. Mason, New York City; Martin A. Mortensen, Battle Creek, Mich., and *Leander H. Shearer, New York City.

* Tuberculosis examiners also.

COMPLETION OF INTERNSHIP OF COMMISSIONED OFFICERS

The Surgeon-General's Office has issued the following statement relative to interns in the Medical Reserve Corps:

When a regularly commissioned officer in the Medical Reserve Corps applies for permission to complete one year's hospital service, such permission will be granted by the Surgeon-General providing the exigencies of the service permit. In order to continue on the inactive list for the completion of internship, the officer concerned will make formal application to the Surgeon-General of the Army, which shall be accompanied by a statement from the executive officer of the hospital certifying the fact that the appointment as intern has been made, and the date on which the internship commenced. In granting permission to continue inactive as above, the following provisions will apply: (*a*) period of internship, in so far as this office is concerned, commences August 1 following graduation of any year and terminates July 31 following; (*b*) in event of termination of service prior to expiration of one year allowed, immediate report must be made to the Surgeon-General by both the executive officer of the hospital and the intern; (*c*) the term internship is hereby interpreted to mean one year's hospital service immediately following graduation and cannot be applied to hospital service entered into after August 1 next succeeding graduation.

Interns who have already received appointments in the Medical Reserve Corps but who have not accepted them may be allowed an opportunity to complete their service as interns either by entering the Medical Enlisted Reserve Corps, conformably to the regulations made and provided for the discharge of interns from military service under the selective service law, or by accepting appointment. In the latter case, application must be made at once as above provided. Those who have not already received commissions in the Medical Reserve Corps and who desire to complete hospital service but who come within the provisions of the selective service law, will be obliged to enlist in the Medical Enlisted Reserve Corps.

At the time of application for permission to continue inactive, commissioned officers to whom this privilege is granted and who are within the draft age will be supplied with a statement to the effect that they are regularly commissioned and subject to orders from this department, and Form 117, prepared by the Provost Marshal-General, and obtainable at the office of the local board, will be signed at this office if a copy is forwarded with the statement that it is required by the local board. Affidavit forms for such officers have been prepared and are being sent to interns commissioned as officers who desire to complete their internships.

Constitution of Board to Write Medical History of the War

A board constituted to write the medical history of the war consists of Lieut.-Col. C. C. McCulloch, M. C., U. S. Army; Major Fielding Garrison, M. R. C., U. S. Army, and Major John S. Fulton, M. R. C., U. S. Army. This committee may be addressed at the Army Medical Museum, Washington, D. C.

Orders to Officers of the Medical Corps

Col. William O. Owen, M. C., now on duty at the Army Medical Museum, to proceed to Detroit, Mich., for the purpose of inspecting the motion picture laboratory of the Ford Motor Works, and on completion of this duty to return to his proper station.

Lieut. Henry L. Krafft, M. C., to be relieved from duty at the Walter Reed General Hospital, Takoma Park, D. C., and to proceed to Camp Dix, Wrightstown, N. J., and report in person to the commanding general of that camp for duty with the division surgeon.

Major Benjamin B. Warriner, M. C., to be relieved from duty at Douglas, Ariz., and to proceed to Mineola, Long Island, N. Y., and report in person to the commanding officer, Hazlehurst Field, Aviation Section, Signal Corps, for duty.

Major Ross H. Skillern, M. C., Pennsylvania N. G., be relieved from his present duty at Camp Sheridan, Montgomery, Ala., and directed to report in person to the commanding general thereof and to the commanding officer of the base hospital for duty in the division of otolaryngology, section of surgery of the head.

Major Thomas D. Woodson, M. C., now in this office, be directed to proceed to the following named places for the purpose of inspecting these sites to determine their degree of availability for use as general hospitals, and on completion of this duty to return to his proper station: Fort Niagara, N. Y; Fort Porter, N. Y.; Fort Ontario, N. Y.; Fort Ethan Allen, Vt.; Madison Barracks, N. Y.; Plattsburg Barracks, N. Y.

First Lieut. Walcott Denison, M. C., on the expiration of sick leave granted him in office orders No. 5403, Surgeon-General's Office, Oct. 9, 1917, be relieved from duty in the office of the Surgeon-General and directed to report in person to the chief surgeon, aviation section, signal corps, for duty in his office, and by letter to the commanding general, aviation section, signal corps, Washington, D. C.

Major Henry B. McIntyre, M. C., New York, N. Y., be directed to proceed to Fort Oglethorpe, Georgia, and report in person to the commandant, Medical Officers' Training Camp, Camp Greenleaf, for duty as instructor.

Major Kerwin W. Kinard, M. C., be relieved from duty at the base hospital, Camp Sherman, Chillicothe, Ohio, and directed to proceed to Fort Riley, Kan., and report in person to the commandant, Medical Officers' Training Camp, for duty as instructor.

Lieut.-Col. Robert L. Carswell, M. C., be relieved from duty at the Medical Officers' Training Camp, Camp Greenleaf, Fort Oglethorpe, Georgia, and directed to proceed to Fort Sam Houston, Texas, and report in person to the commanding general, southern department, for duty.

The barbecue at the meeting of the Association of Military Surgeons at Fort Benjamin Harrison, Indiana. In the background may be seen the evacuation hospital established by Major H. M. Lyle.

Orders to Officers of the Medical Reserve Corps

ALABAMA

To Camp Jackson, Columbia, S. C., for the purpose of making examinations in his specialty, from Phipps Clinic, Baltimore, Md., Lieut. Wilbur L. Heard, Mt. Vernon.

To Camp Meade, Annapolis Junction, Md., for duty, Lieut. Thomas M. McMillan, Jr., Mobile.

To Fort Oglethorpe for instruction, Lieuts. Jacob D. Staples, Camp Hugh; Edward D. McAdory, Cullman; Joseph M. Weldon, Tallassee; Walter E. Allen, Ward; from Motor Ambulance Supply Depot, Louisville, Ky., Charles W. Williams, Cherokee.

To Newport News, Va., for duty with 303d Stevedore Regiment, from Fort Oglethorpe, Capt. Mack Rogers, Birmingham.

To his home and return to the inactive list of the Medical Reserve Corps of the Army on account of being physically disqualified for active service, Lieut. Horace L. McWhorter, Collinsville.

Honorably discharged, Lieuts. Joseph M. Theringer, Mobile; from the Medical Reserve Corps on account of holding a commission in the National Guard, Frank V. Meriwether, Samson, Ala.

ARKANSAS

To Camp Funston, Fort Riley, Kan., for duty, from Medical Officers' Training Camp, Lieut. Samuel G. Boyce, Little Rock.

To Camp Pike, Little Rock, Ark., from Camp Beauregard, Alexandria, La., for duty with the First Arkansas National Guard, Lieut. James E. Phillips, Eureka Springs.

To Fort Oglethorpe for instruction, Lieuts. John E. Burns, Black Rock; Mathew A. Bizzell, Doddridge; James E. Johnson, Fort Smith; Raphael W. Steele, Gentry; Mahlon D. Ogden, Geyer C. Wood, Little Rock; Everett N. Lipe, Scranton; John M. Bearden, Sonora.

To Washington University, St. Louis, Mo., for three weeks' intensive training, Lieut. Sydney J. Wolfermann, Ft. Smith.

CALIFORNIA

To Camp Cody, Deming, N. M., for duty, Lieut. Clarence W. Dodge, Los Angeles.

To Camp Lewis, American Lake, Wash., for duty, Lieuts. Robert W. Brace, Modesto; John E. Paulson, San Quentin.

To Camp Mills, Garden City, L. I., for duty with First Colorado Field Hospital, from Camp Baldwin, Denver, Colo., Lieut. Paul A. Opp, Los Angeles.

To Fort Oglethorpe for instruction, Lieut. John H. Woolsey, San Francisco.

To Los Angeles, for a course of instruction in military roentgenology, Lieut. John P. Byrnes, Oakland.

To their homes and return to the inactive list of the Medical Reserve Corps, Major James R. Moore, Los Angeles; Lieut. Charles H. Bailey, San Francisco.

CANAL ZONE

To Mineola, L. I., for duty with the Aviation Section, from duty at Balboa, Canal Zone, Capt. Edward P. Leverly, Cristobal.

COLORADO

To Dodge, Iowa, for duty in his specialty, from duty at Fort Douglas, Utah, Lieut. Philip Work, Pueblo.

To Camp Funston, Fort Riley, Kan., for duty, from Medical Officers' Training Camp, Lieuts. Floyd C. Turner, Stoneham; Aubert Durnell, Strong.

To Camp Robinson, Sparta, Wis., for duty with the 8th Field Artillery, Lieut. Robert L. Zaegel, Denver.

To Fort Logan, Colo., for duty, Major William W. Grant, Denver.

To Fort Oglethorpe for instruction, Lieuts. William S. Brown, Denver; James M. Shields, Grand Junction; Ernest G. Edwards, La Junta.

To his home and return to the inactive list of the Medical Reserve Corps on account of being physically disqualified for active service, from duty at Fort Oglethorpe, Lieut. Harry B. Sobernheimer, Meeker.

CONNECTICUT

To Fort McHenry, Md., for duty in the laboratory, Lieut. Abraham L. O'Shansky, New Haven.

To Fort Oglethorpe, for instruction, Lieut. Owen O'Neill, Willimantic.

To Neurological Institute, New York, N. Y., for intensive study in his specialty, Lieut. Harold A. Bancroft, Hartford.

Honorably discharged on account of being physically disqualified, Lieut. Albert A. Wheelock, New Canaan.

DELAWARE

To Fort Oglethorpe for instruction, Lieut. John B. Rutherford, Wilmington.

DISTRICT OF COLUMBIA

To Camp Hancock, Augusta, Ga., from Fort Oglethorpe, for duty in the division of plastic and oral surgery, section of surgery of the head, Lieut. Oliver C. Cox, Washington.

To Camp Logan, Houston, Tex., for duty as a member of a board of medical officers for tuberculosis examination, Lieut. Richard M. Little, Washington.

To Camp Wheeler, Macon, Ga., 31st Division, for duty as member of a board of medical officers for tuberculosis examination, from Fort Myer, Va., Lieut. Frederick Sohon, Washington.

To Cornell Medical College, New York, for a course of instruction in military roentgenology, Lieut. Stuart C. Johnson, Washington.

To Fort Oglethorpe for instruction, Lieuts. True S. Burgess, Albert E. Pagan, David G. Sampson, James S. Taylor, Washington.

To Langley Field, Hampton, Va., for temporary duty in connection with aviation and upon completion of this duty to return to their proper station, Majors Edward G. Seibert and William H. Wilmer, Washington.

To Mineola, L. I., from Washington, D. C., for temporary duty in connection with the Aviation Service of the Army, Majors William H. Wilmer and Edward G. Seibert, Washington.

To Rockefeller Institute, New York, for a course of instruction and upon completion of this course to return to his home and to the inactive list of the Medical Reserve Corps, Major James F. Mitchell, Washington.

FLORIDA

To Camp Meade, Annapolis Junction, Md., for duty with 23rd Engineer Regiment, from Fort Oglethorpe, Lieut. Adam C. Walkup, McIntosh.

To Fort Oglethorpe for instruction, Capt. Thomas A. Neal, Sanford; Lieut. Henry P. Bevis, Arcadia.

To Mineola, L. I., Signal Corps Aviation School, Hazelhurst Field, from Aero Squadron at Fort Wood, N. Y., for duty, Lieuts. James L. Pennington, Fountain; Claude V. Gautier, Passagrilla.

To Yaphank, L. I., from Fort Oglethorpe for duty as assistant to the division surgeon, Lieut. James B. Griffin, St. Augustine.

Honorably discharged, from the Medical Reserve Corps of the Army, from duty at Fort Oglethorpe, Capt. Joseph N. Fogarty, Key West.

GEORGIA

To Camp Meade, Annapolis Junction, Md., for duty with 23rd Engineer Regiment, from Camp Greenleaf, Fort Oglethorpe, Lieut. Henry D. Coffee, Auburn.

To Camp Wheeler, Macon, Ga., for duty, from duty at Atlanta, Ga., Lieuts. Thomas F. Jackson, Atlanta; for temporary duty, William F. Cross, Cassville.

To Fort Oglethorpe for instruction, Lieuts. Northen C. Tribble, Atlanta; Donald T. Rankin, Blackshear; Robert H. McDonald, Bullochville; Gordon S. Sumner, Poulan; Jesse H. Hendry, Shellman; Walter E. Mobley, Social Circle; Carl B. Walch, Tifton; Claude G. Scruggs, Valdosta.

To Newport News, Va., for duty with 304th Stevedore Regiment, from Fort Oglethorpe, Lieut. Clifford M. Mitchell, Dalton.

Par. 10, special orders No. 201, War Dept., Aug. 29, 1917, as relates to Lieut. John H. Hall, Atlanta, be modified so as to assign him to active duty at Emory University, Atlanta, Ga., with examining unit at that place.

To return to the inactive list of the Medical Reserve Corps, from duty at Fort Oglethorpe, Lieut. Grady L. Carter, Talbotton.

Around the bonfire at the meeting of Military Surgeons, Medical Officers' Training Camp, Fort Benjamin Harrison, Indiana.

ILLINOIS

To Camp Dodge, Des Moines, Ia., from Fort Riley, Capt. Robert R. B. Jacks, Highwood; Lieuts. Harry I. Stevens, Ashley; Louis L. Brodsky, Lewis H. L. Lippmann, Edward T. Robinson, Chicago; Knud Hartnack, Downers Grove; Franklin B. Pearce, Eldorado; Edward E. Edmondson, Mt. Vernon; for temporary duty, John Higginson, Chicago.

To Camp Funston, Fort Riley, Kan., for duty, from Medical Officers' Training Camp, Lieuts. Hart H. Fisher, Urban B. Harris, Vernon M. Jared, Ellis V. C. Moulton, Chicago; Joseph C. Kaczkowski, Dunning; Robert G. Bond, Harrisburg; Randolph F. Snider, St. Francisville; Roy H. Wilson, Tampico.

To Camp Gordon, Atlanta, Ga., for duty in the surgical service after completion of course at Rockefeller Institute, New York, Capt. Herbert L. Thompson, Harrisburg.

To Camp Grant, Rockford, for duty, Lieut. Imas P. Rice, Oak Park.

To Camp Logan, Houston, Tex., for duty in division of otolaryngology, section of surgery of the head, from the base hospital at Camp Logan, Lieut. Jerome F. Strauss, Chicago.

To Camp Pike, Little Rock, Ark., for duty in charge of the division of brain surgery, section of surgery of the head, Capt. William Fuller, Chicago.

To Camp Sevier, Greenville, S. C., from Fort Benjamin Harrison, Ind., for duty in the division of plastic and oral surgery, section of surgery of the head, Lieut. Lyman A. Burnside, West Union.

To Camp Taylor, Louisville, Ky., for temporary duty, Capt. Albert A. Ankenbrandt, Mt. Carmel.

To Columbus Barracks, Ohio, for duty, Lieut. Edmund B. Owens, Dixon.

To Cook County Hospital, Chicago, for a course of instruction in military roentgenology, Lieut. Edward W. Johannes, Chicago.

To Fort Benjamin Harrison, for instruction, Lieuts. William H. Crede, Chicago; Roy M. Montfort, Danville; for tuberculosis instruction, Samuel M. Marcus, Chicago.

To Fort Des Moines, Iowa, for duty in orthopedic service, Capt. Frederick C. Test, Chicago.

To Fort Leavenworth, Kan., for duty, Capt. Louis Thexton, Chicago.

To Fort Oglethorpe, for instruction, Lieuts. Oluf J. Pederson, Robert S. Salk, Alonzo W. Saunders, Samuel J. Taub, Earl DeW. Wise, Chicago; Harver W. Tupper, Nokomis; Ira E. Neer, Springfield, and Franklin A. Martin, Tower Hill.

To Fort Slocum, N. Y., for duty, Capt. Henry F. Lewis, Chicago.

To Physical Examining Unit, Aviation Section, Signal Officers Reserve Corps, New York, for duty as medical member of examining board, Lieut. Grover C. Otrich, Belleville.

To Tenafly, N. J., for duty from Army Medical School, Lieut. Edwin R. May, Chicago.

To report in person to the commanding officer of the base hospital for duty, from Camp Bowie, Fort Worth, Texas, Lieut. Charles W. Monroe, Arthur.

To their homes and the inactive list of the Medical Reserve Corps, Lieuts. Robert E. Flannery, George M. Landau, Chicago; Edmon E. Richardson, Mattoon; Adelbert M. Sustin, Mendon.

INDIANA

To Camp Cody, Deming, N. M., from Fort Benjamin Harrison, for duty in the division of plastic and oral surgery, section of surgery of the head, Lieut. Reavill M. Walden, Evansville.

To Camp McClellan, Anniston, Ala., from Fort Benjamin Harrison, for duty in the division of plastic and oral surgery, section of surgery of the head, Lieut. Elmer C. Singer, Fort Wayne.

To Fort McHenry, Md., for duty in the division of ophthalmology and Otolaryngology, section of surgery of the head, Lieut. George W. Boner, Washington.

To Fort Oglethorpe, for instruction, Capt. Henry O. Bruggeman, Fort Wayne; Lieuts. Raymond A. Butler, Beech Grove; Grover A. Smith, Bryant; Arthur J. Fletcher, Connersville; Ephraim M. Folsom, Evansville; Frank A. Brayton, Sewell B. Coulson, Edward A. Willis, Indianapolis; Cyrus B. Gardner, Kendallville; James L. Saunders, Newport; John J. Connelly, Rockville; Jules L. Bierach, Salem.

IOWA

To Camp Bowie, Fort Worth, Texas, from Fort Riley, for duty in the division of plastic and oral surgery, section of surgery of the head, Lieut. Prentice B. Cleaves, Cherokee.

To Camp Dodge, Des Moines, Iowa, from Fort Riley, for duty, Lieuts. Roy C. Alt, Cedar Rapids; Leo C. Kuhn, Chariton; John W. Elder, Alfred S. Price, Des Moines; Joseph L. Ruyabitz, Duncombe; Charles L. Jones, Gilmore City; Royal C. Danley, Hamburg; Lawrence J. Kaasa, Lake Mills; Sylvanus E. Gorbin, Millerton; Walter E. Anthony, Ottumwa; Christian H. Dewey, Perry; Gardner F. Parker, Pocahontas; William H. Clary, Prescott; Stephen B. Rybolt, Troy Mills; for temporary duty, Gerald V. Coughlan, Pacific Junction; for duty in connection with the division of otolaryngology, section of surgery of the head, James A. Downing, Des Moines.

To Camp Funston, Fort Riley, Kan., for duty, Lieut. Jesse L. Saar, Summitville.

To Camp Grant, Rockford, Ill., for duty, Lieuts. Louis L. Bowie, Buckeye; for temporary duty, Clarence Harman, Whiting.

To Camp Lewis, American Lake, Wash., for duty, Lieut. William F. Brinkman, Des Moines.

To Camp Logan, Houston, Texas, for duty, Lieut. Jesse T. Grayston, Hazleton.

To Fort Meyer, Va., for duty with the Twelfth Field Artillery, Lieut. Charles T. Maxwell, Sioux City.

To Fort Oglethorpe, for instruction, Lieuts. Arthur C. Strong, Burlington; Thomas F. Thomson, Charter Oak; Emery W. Lehman, Des Moines; Garnett S. Feh, New Providence; Samuel W. Hartwell, New Sharon; Charles B. Bent, Sioux City.

To Iowa City, Iowa, for the purpose of procuring material at the University of Iowa for a course of lectures to be given at Medical Officers' Training Camp, Fort Riley, Kan., Capt. Clarence Van Epps, Iowa City.

To Washington, D. C., for duty in the Surgeon-General's Office, Des Moines.

Par. 87, Special Orders, No. 213, War Department, Sept. 13, 1917, as relates to Major James F. Clarke, Fairfield, be modified so as to direct him on completion of his course at Rockefeller Institute, New York, to report to Major F. H. Albee, New York, for a course of instruction in bone grafting, and on completion of this duty to proceed to his home and return to the inactive list of the Medical Reserve Corps of the Army.

KANSAS

To Camp Dodge, Des Moines, Iowa, from Fort Riley, for duty, Lieuts. Roy W. Layton, Kansas City; Joseph E. Miller, Salina; Foy J. M. Ernest, Topeka.

To Camp Funston, Fort Riley, Kan., for Medical Officers' Training Camp, Capt. James C. Butler, Stafford; Lieuts. Charles M. Hensley, Topeka, Wilhelm A. Gartner, Troy; William T. Doherty, George E. Egloff, William P. Greening, Wichita.

To Camp Mills, Garden City, **L. I., for duty, Capt.** Samuel T. Millard, Topeka.

To Cornell Medical College, New York, from Fort Riley, Kan., for a course of instruction in military roentgenology, Capt. Charles J. McGee, Leavenworth.

To Fort Oglethorpe, for a course of instruction, Major Frederick W. O'Donnell, Junction City; Lieuts. George L. Dailey, Almena; George W. Potts, New Lancaster; Charles M. McKinley, Strong.

To report in person to the commanding officer of the base hospital for duty, from Camp Bowie, Fort Worth, Texas, Lieut. Arthur Knisely, Liberal.

To Washington, D. C., and report in person to the Surgeon-General of the Army, for duty in his office, Capt. John S. Fulton, Kiowa.

Par. 9, Special Orders, No. 186, War Department, Aug. 11, 1917, as relates to Lieut. Ronald O. Logsdon, Wichita, be modified so as to direct him to Camp Greenleaf, Fort Oglethorpe.

To their homes and return to the inactive list of the Medical Reserve Corps of the Army on account of being physically disqualified for active service, Lieuts. James B. Donnell, Kinsley; Alexander Haggart, Ottawa.

KENTUCKY

To Camp Dodge, Des Moines, Iowa, from Fort Riley, for duty, Lieut. Clarence DeWeese, Fordsville.

To Camp Funston, Fort Riley, Kan., for duty, from Medical Officers Training Camp, Lieuts. Walter L. Coolidge, Louisville; Thomas R. Griffin, Somerset.

To Camp Lee, Petersburg, Va., for duty, Capt. David P. Crockett, Hardy.

To Camp Taylor, Springfield, Ky., for duty, Capt. Meredith W. Hyatt, Springfield.

To Camp Wheeler, Macon, Ga., for regimental duty, from Fort Oglethorpe, Capt. Charles M. Gower, Trenton; for duty with ambulance companies, from Fort Oglethorpe, Lieut. John R. Jones, Princeton.

To Cornell Medical College, New York, for a course of instruction in military roentgenology, Capt. Vernon Blythe, Paducah.

To Fort Monroe, Va., for duty in the division of otolaryngology, section of surgery of the head, Capt. James R. Peabody, Louisville.

To Fort Oglethorpe, for instruction, Lieuts. William H. Nash, Finchville; Oliver H. P. Parrigin, Lexington; George M. McLeish, Louisville.

To Fort Thomas, Ky., for duty, Lieut. Owen B. Dameree, Mount Sterling.

To Provisional Hospital, Fort Oglethorpe, for duty as roentgenologist, from Camp Greenleaf, Lieut. John C. Howard, Middlesboro.

To Washington University, St. Louis, for three weeks' intensive training, Capt. Robert M. Coleman, Lexington.

LOUISIANA

To Boston, from Army Medical School, Washington, D. C., for a course of instruction in orthopedic work and on completion of this course to return to their proper station, Lieuts. Lucian A. Fortier and Henry T. Simon, New Orleans.

To Camp Funston, Fort Riley, Kan., for duty from Medical Officers Training Camp, Lieuts. Walter F. Henderson, Belcher; Doctor D. Gill, Gilbert.

To Camp Greene, Charlotte, **N. C.**, for duty, Lieut. Philips J. Carter, New Orleans.

To Camp Shelby, Hattiesburg, Miss., for duty in charge of the division of brain surgery, section of surgery of the head, Lieut. Karl W. Ney, New Orleans.

To Camp Vail, Little Silver, **N. J.**, for duty, Lieut. Haston V. Jones, Zona.

To Camp Wheeler, Macon, Ga., for duty with ambulance companies, from Camp Greenleaf, Fort Oglethorpe, Lieut. Solon R. Humphries, New Orleans.

To Fort Oglethorpe, for the purpose of examining the personnel of that camp in his specialty, Major Roy McL. Van Wart, New Orleans, for instruction, Lieuts. William L. Atkins, Athens; William R. Strange, New Orleans.

MAINE

To Boston, for instruction in military roentgenology, Lieut. Herbert W. Hall, Hallowell.

To Fort Oglethorpe, for instruction, Lieut. Gilman H. Clough, Dexter.

MARYLAND

To Camp Dodge, Des Moines, Iowa, for temporary duty, Lieut. Thomas N. Toomey, Baltimore.

To Camp Sheridan, Montgomery, Ala., Thirty-Seventh Division, for duty as member of a board of medical officers for tuberculosis examination, from Fort Myer, Va., Lieuts. Algernon D. Atkinson, for duty in the division of plastic and oral surgery, section of surgery of the head, from Fort Benjamin Harrison, Herbert W. Rogers, Baltimore.

To Camp Wheeler, Macon, Ga., for duty with ambulance companies, from Fort Oglethorpe, Lieut. Charles L. Magruder, New Market.

To Fort McHenry, Md., for duty as acting medical chief of General Hospital No. 2, Capt. Joseph A. Chatard, Baltimore.

To Fort Oglethorpe, for instruction, Lieuts. Julio R. Rolenson, George P. Ross, Leo F. Steindler, Baltimore.

To inactive list of Medical Reserve Corps, **Lieut.** John T. King, Jr., Baltimore.

To report by wire to the commanding general Southern Department, for assignment to duty, Lieut. Francis O. Barrett, Baltimore.

To Washington, D. C., for duty in the food section, Lieut. Albert T. Shohl, Baltimore.

To Washington University, St. Louis, for three weeks' intensive training, Lieut. Fred Rankin, Baltimore.

MASSACHUSETTS

To Boston, for a course of instruction in military roentgenology, Lieuts. Roy S. Perkins, Lowell; Charles L. M. Judkins, Lynn.

To Boston Psychopathic Hospital, Boston, for intensive study in his specialty, Lieut. Cyrus B. Partington, Fall River.

To Boston State Hospital, for a course of intensive study in his specialty, Lieut. Carl B. Hudson, Boston.

To Camp Bowie, Fort Worth, Texas, for duty, Lieut. John F. Ford, Boston.

To Camp Devens, Ayer, Mass., Camp Upton, Yaphank, **L. I.**; Camp Mills, Garden City, L. I., and Camp Dix, Wrightstown, N. J., for the purpose of making a special inspection of the section of surgery of the head for the Medical Department, and on completion to return to his proper station, Major Harris P. Mosher, Boston.

To Camp Devens, Ayer, Mass., for duty, Lieut. William **A.** Moncrieff, New Bedford.

To Camp Gordon, Atlanta, Ga., for duty in division of ophthalmology section of surgery of the head, Lieut. Dennis F. O'Conner, Worcester.

To Camp Meade, Annapolis Junction, Md., for temporary duty, Lieut. Harry C. Burrell, Medford.

To Camp Upton, Yaphank, L. I., for duty with division of otolaryngology, section of surgery of the head, Lieut. Charles T. Porter, Boston.

To Camp Wheeler, Macon, Ga., Thirty-First Division, for duty as a member of a board of medical officers for tuberculosis examination, from Fort Benjamin Harrison, Lieut. Charles E. Perry, Haydenville.

To Fort Leavenworth, Kan., for duty, Major John J. Thomas, Boston.

To Fort Oglethorpe, for instruction, Capts. John W. Lane, Boston; Charles Whelan, Hingham; Lieuts. Joseph C. Savage, Boston; Edmund A. Rogers, Brookline; Aimo N. Fregeau, Fitchburg; Nicholas A. Gallagher, Malden; William A. McCormick, New Bedford; Louis I. Skirball, Revere.

To his home and honorably discharged on account of being physically disqualified for active service, Lieut. Walter D. Berry, S. Weymouth.

MEXICO

Par. 9, Special Orders, No. 186, War Department, Aug. 11, 1917, as relates to Lieut. Ezra A. Lines, Piedros Negros, modified so as to direct him to Fort Oglethorpe.

MICHIGAN

To Camp Custer, Battle Creek, Mich., for duty, Lieut. Alford E. W. Yale, Pigeon.

To Camp Funston, Fort Riley, Kan., for duty, from Medical Officers Training Camp, Capt. William B. Lunn, Marquette; Lieut. James H. Kelsey, Cassopolis.

To Camp Shelby, Hattiesburg, Miss., from Fort Benjamin Harrison, for duty in the division of plastic and oral surgery, section of surgery of the head, Lieut. David D. Todd, Calumet.

To Fort McHenry, Md., for duty in the surgical service, Lieut. George C. Hafford, Albion.

To Fort Oglethorpe, for instruction, Capt. Frank C. Kinsey, Grand Rapids; Lieuts. Abraham W. Hudson, Vincent S. Mancuso, John T. Watkins, Detroit; Willard R. Vaughan, Plainwell.

To Mineola, L. I., for duty in charge of the Division of Ophthalmology, section of surgery of the head in aviation, from Fort Benjamin Harrison, Capt. Donald E. MacPhrail, Wakefield.

To Rockefeller Institute, New York, for a course of instruction and upon completion of this course to return to his home and to the inactive list of the Medical Reserve Corps, Capt. Alexander M. Campbell and Lieut. John T. Hodgen, Grand Rapids.

To Washington University, St. Louis, Mo., for three weeks' intensive training, Major Peter D. MacNaughton, Calumet; Lieut. Albert S. Barr, Greenville.

Par. 1 of letter of Sept. 26, 1917 (4730), as relates to Lieut. John M. Carter, Detroit, be modified so as to relieve him from duty in the ophthalmic division, of the base hospital, Camp Wadsworth, and direct him to report in person to the commanding general of that camp for duty.

MINNESOTA

To Camp Bowie, Fort Worth, Tex., from Fort Snelling, Minn., for duty as a member of a board of medical officers for the special examination for tuberculosis, Lieut. Alexander Josewich, Minneapolis.

To Camp Dodge, Des Moines, Ia., from Fort Riley, for duty, Capt. John B. Robertson, Cottonwood; Lieuts. Ronald L. Laney, Brown Valley; James R. Elsey, Glennwood; Frederick A. Engstrom, Hills; William P. O'Malley, St. Paul.

To Camp Funston, Fort Riley, Kan., for duty, from Medical Officers Training Camp, Lieut. Samuel T. Forsythe, Rochester.

To Camp Grant, Rockford, Ill., for duty, Lieuts. John R. Wood, Hallock; Harry M. Lowell, Rochester; Hugh W. Reynolds, Chatfield.

To Camp Lewis, American Lake, Wash., for duty, Lieut. Roy E. Swanson, Alexandria.

To Fort Oglethorpe for instruction, Lieuts. Percy **A.** Ward, Minneapolis; William J. Stock, Waconia.

To Rockefeller Institute, New York, for a course of instruction and upon completion of this course to return to his home and to the inactive list of the Medical Reserve Corps, Lieut. Thomas J. Snodgrass, Minneapolis.

To his home and return to the inactive list of the Medical Reserve Corps from duty in the Surgeon-General's Office, Major Charles H. Mayo, Rochester.

MISSISSPPI

To Camp Doniphan, Fort Sill, Okla., from Camp Greenleaf, Fort Oglethorpe, Ga., and report in person to the commanding general thereof and to the comanding officer of the base hospital for duty, Lieut. Thomas W. Holmes, Winona.

To Camp Funston, Fort Riley, Kan., for duty, from Medical Officers' Training Camp, Lieut. Oliver R. Fore, Flora.

To Camp Grant, Rockford, Ill., for duty with 35th Engineer regiment, from Camp Greenleaf, Fort Oglethorpe, Lieut. John E. McDill, Shaw.

To Camp Meade, Annapolis Junction, Md., for duty with 23d Engineer Regiment, from Camp Greenleaf, Fort Oglethorpe, Lieut. Leonidas F. Barrier, Greenwood.

To Camp Wheeler, Macon, Ga., for regimental duty, from Camp Greenleaf, Fort Oglethorpe, Lieut. Robert M. Leigh, Meridian.

To Fort Oglethorpe, for instruction, Lieuts. John S. Adams, Bay St. Louis, Ellis P. Burns, Ratliff.

Par. 9, Special Orders, No. 186, War Dept., August 11, 1917, as relates to Lieut. William C. Lester, Isola, is modified so as to direct him to Camp Greenleaf, Fort Oglethorpe.

MISSOURI

To Camp Bowie, Fort Worth, Tex., for duty, from Base Hospital, Lieut. Arthur C. F. Brown, Kansas City.

To Camp Dodge, Des Moines, Ia., from Fort Riley, for duty, Capt. Robert Middlebrook, Lieut. Evan S. Connell, Kansas City.

To Camp Funston, Fort Riley, Kan., for duty, from Medical Officers' Training Camp, Lieuts. Fred. C. Albright, Bronaugh; Joseph Getelson, Zacharian G. Jones, Ward H. Leonard, John C. Lynch, Kansas City; Jasper LeR. Atherton, Springfield; Martin F. Kouri, St. Louis.

To Fort McHenry, Md., for duty, in the surgical service after completion of course at Rockefeller Institute, New York, Lieut. Hilen K. Wallace, St. Joseph.

To Fort Oglethorpe, for instruction, Capt. Oscar F. Baerens, St. Louis; Lieuts. George W. Rice, Kansas City; Abram E. Platter, Memphis; John M. Percy, Princeton; Martin H. Post, St. Louis.

To Kansas City, Mo., from Camp Wheeler, Macon, Ga., for the purpose of examining applicants for appointment in the Officers' Reserve Corps, Capts. Roger B. Brewster, Kansas City; for duty in connection with the Medical Reserve Corps of the Army and upon completion of this duty to return to his proper station, William H. Luedde, St. Louis.

To Minneola, L. I., N. Y., Signal Corps Aviation School, Hazlehurst Field, from Aero Squadrons at Fort Wood, N. Y., for duty, Lieut. Clyde O. Brown, St. Louis, Mo.

To Tenafly, N. J., 501st Batallion from Camo Mills, Lieuts. Charles H. Brown, Fair Play; for duty from Army Medical School, Washington, D. C., Edward P. Heller, Kansas City.

To Washington, D. C., Army Medical School, for instruction, Lieut. Rollo P. Bourbon, St. Louis, Mo.

To Washington University, St. Louis, Mo., for three weeks' intensive training, Capts. Virgil Loeb, Charles A. Vosburgh, St. Louis.

Honorably discharged, Capt. Guy L. Noyes, Columbia; Lieut. Albert L. Evans, Bonne Terre.

To his home and return to the inactive list of the Medical Reserve Corps of the Army, Lieut. Montague M. Meyers, St. Louis.

MONTANA

To Camp Funston, Fort Riley, Kan., for duty, from Medical Officers' Training Camp, Lieuts. Lindsay W. Baskett, Baker; Cornelius B. Boyle, Eureka; Serge Androp, Richey.

To Camp Lewis, American Lake, Wash., for duty, Lieut. Carl L. Koehn, Red Lodge.

To Fort Oglethorpe for instruction, Lieuts. Joseph C. Denney, Clydepark; Charles B. Fleischmann, Froid; John J. Tobinski, Missoula; Stacy T. Noland, Warmsprings.

To Fort Russell, Wyo., for duty, Lieut. Ralph S. Hedges, Lewistown.

NEBRASKA

To Camp Dodge, Des Moines, Iowa, from Fort Riley, for duty, Lieuts. Charles E. Legg, Champion; Frank D. Ryder, Lyons; Charles F. Shock, Omaha; Harry L. Wells, West Point.

To Camp Funston, Fort Riley, Kan., for duty from Medical Officers' Training Camp, Lieut. Samuel Earl Metheny, Cairo.

To Camp Logan, Houston, Tex., from Fort Riley, for duty in the division of plastic and oral surgery, section of surgery of the head, Lieut. Frank M. Barns, Omaha.

To Camp Robinson, Sparta, Wis., from the 17th Field Artillery, Camp Robinson, for duty with the Provisional Recruit Batallion, 7th Field Artillery, Lieut. Frederick A. Van Buren, Omaha.

To Camp Taylor, Louisville, Ky., for duty with the Ambulance Co. No. 35, Lieut. Joseph A. Fleischman, Shelton.

To Fort Oglethorpe for instruction, Capts. Charles E. Remy, Ainsworth; Judd A. Strong, Kearney; Lieuts. Neil P. McKee, Atkinson; Dexter D. King, York; Laird W. Elwood, Weston.

To Kansas City, Mo., for a course of instruction in military roentgenology, Lieut. Joseph Antony, Burning.

To Minceola, L. I., Signal Corps Aviation School, Hazlehurst Field, from Aero Squadrons at Fort Wood, N. Y., for duty, Lieut. Ralph C. Christie, Clarks.

NEVADA

To Fort Douglass, Utah, for duty, Lieut. William T. Gleason, Ely.

To Fort Oglethorpe for instruction, Lieut. Only J. Chaney, McDermitt.

NEW HAMPSHIRE

To St. Elizabeth's Hospital, Washington, D. C., for a course of instruction in his specialty, Capt. Albert E. Brownrigg, Nashua.

To his home and return to the inactive list of the Medical Reserve Corps, Lieut. Clarence E. Dunbar, Manchester.

NEW JERSEY

To Camp Dix, Wrightstown, N. J., for duty, Capt. Joseph W. Williams, Paterson; for duty as assistant in the general surgical section, Lieuts. James B. Griswold, Morristown; for duty in the genito-urinary section, Charles H. deT. Shivers, Atlantic City.

To Camp Wheeler, Macon, Ga., from Camp Mills, for duty as member of the board of medical officers for tuberculosis examination, Lieut. Harvey M. Ewing, Montclair.

To Cornell Medical College, New York, for a course of instruction in military roentgenology, Lieuts. Alfred L. L. Bell, Englewood; Robert D. Schimelpfennig, Montclair.

To Fort Oglethorpe for instruction, Lieuts. Joseph Binder, Jersey City; Maurice Cohen, Paterson; Samuel T. Day, Jr., Port Norris; from duty with Medical Officers Training Camp and report to commanding officer for duty with 6th Infantry, Harvey S. Brown, Freehold.

To Madison Barracks, N. Y., for duty, Capt. Henry H. Mayne, Lockport.

To Newport News, Va., for duty with 304th Stevedore Regiment, from Fort Oglethorpe, Lieut. Julius Gerendasy, Elizabeth.

NEW YORK

To Boston, Mass., for instruction in orthopedic surgery and upon completion of this course to proceed to Philadelphia, Pa., Neurological School, University of Pennsylvania, for instruction in brain surgery, Lieut. Joseph E. J. King, New York City.

To Buffalo, N. Y., Rochester, N. Y., Utica, N. Y., for duty in connection with the Medical Reserve Corps of the Army and upon completion of this duty to return to his proper station, Capt. Frederick T. Van Beuren, New York City.

To Camp Bowie, Fort Worth, Tex., from Fort Benjamin Harrison, for duty as a member of the board of medical officers for tuberculosis examination, Lieuts. Herman Judkowitz, Brooklyn, and Robert E. Plunkett, Whitehall.

To Camp Custer, Battle Creek, Michigan, for duty, Lieut. Thomas G. Amos, New York City.

To Camp Dix, Wrightstown, N. J., for duty in the surgical service after completion of course at Rockefeller Institute, New York City, Capt. James W. Jameson, New York City.

To Camp Doniphan, Fort Sill, Okla., for duty, Capt. Frank G. Young, New York City; from Fort Slocum, N. Y., Lieut. Curtenine Gillette, New York City.

To Camp Funston, Fort Riley, Kan., for duty as assistant to the chief of the medical service, Lieut. John J. Beard, Cobleskill; for duty from Medical Officers' Training Camp, Lieut. Samuel W. Houston, Wolcott.

To Camp Greene, Charlotte, N. C., from Camp Mills, for duty as member of the board of medical officers for tuberculosis examinations, Capt. Geza Kremer and Lieut. Thomas F. Ellis, New York City.

To Camp Logan, Houston, Tex., for duty as a member of a board of medical officers for tuberculosis examination, from Fort Benjamin Harrison, Capt. Gilbert W. Crissey, Mechanicsville.

To Camp McClellan, Anniston, Ala., for duty, after completion of course at Rockefeller Institute, New York City, Capt. Edward M. Colie, New York City.

To Camp Meade, Annapolis Junction, Md., for the purpose of conferring with the Division Surgeon in connection with the mental and nervous examinations, Major Pearce Bailey, New York City.

To Camp Sevier, Greenville, S. C., for duty in the division of otolaryngology, section of surgery of the head, from Base Hospital, Lieut. George F. Gracey, New York City.

To Camp Taylor, Louisville, Ky., from Camp Mills, Garden City, L. I., for the purpose of examining the troops in his specialty, Capt. Morris J. Karpas, New York City.

To Camp Travis, Fort Sam Houston, Tex., for the purpose of making examinations in his specialty, from Neurological Institute, New York City, Lieut. Augustus B. Dykman, Poughkeepsie.

To Camp Upton, Yaphank, L. I., Camp Dix, Wrightstown, N. J., and report in person to the commanding general for conference with the division surgeon and psychiatrist at these stations, Major Pearce Bailey, New York City.

To Camp Upton, Yaphank, L. I., for duty in connection with the division of otolaryngology, section of surgery of the head, Lieut. Owen R. O'Neill, New York City.

To Camp Wheeler, Macon, Ga., from Fort Benjamin Harrison, Ind., for duty in the division of plastic and oral surgery, section of surgery of the Head, Capt. Francis R. Lyman, Hastings-on-Hudson; from Camp Mills, for duty as member of the board of medical officers for tuberculosis examinations, Capt. Stanmore L. Cash, New York City; Lieut. Frank McLean, New York City; from Camp Greenleaf, Fort Oglethorpe, Ga., for regimental duty, Lieut. Henry S. Fruitnight, New York City.

To Cornell Medical College, New York City, for duty as assistant instructor in military roentgenology, Capt. Frederick M. Law, New York City; for a course of instruction in military roentgenology, Lieuts. Theodore S. West, Albany; Barnett Aronson, and Max Mensch, Brooklyn; Samuel Tripler, New York City; Abraham Lebendig, Rochester; and Herbert deG. Sherman, White Plains.

To Fort Adams, Rhode Island, for duty, Capt. James E. Holden, Collins.

To Fort Benjamin Harrison, Indiana, for instruction, Maj. Linsley R. Williams, New York City.

To Fort Ethan Allen, Vt., for duty, Capt. Edward G. Clifton, New York City.

To Fort McPherson, Ga., for duty at the Base Hospital, Lieut. Karl M. Bowman, White Plains; for duty in orthopedic service, Lieut. Earl C. MacCordy, Amsterdam.

To Fort Oglethorpe, Ga., for a course of instruction, Capts. Arthur R. Green, Mt. Kisco; Ira Cohen, Geo. D. Hamlen, and James C. Harkins, New York City; Alexander C. Calisch, Oswego; Lieuts. Conrad A. Rissberger, Albany; Nelson M. Holden, Francis B. Ring, and Benjamin E. Spiegel, Brooklyn; Jerome A. Murphy and Alfred H. Vogt, Buffalo; Ernest G. Gilmore, Johnstown; Herbert F. Jackson, Edmond C. Linton, Aloysius M. Mulholland, Robert E. Pound, Nathan Rosenthal, Harold B. Scovern, Robert E. Walsh, and Charles Wolf, New York City; Lawrence D. Cremin, Ossining, and Fred Vosburgh, Standish; after completion of course at Rockefeller Institute, New York City, Lieut. Roscoe C. Webb, New York City.

To Fort Slocum, N. Y., for duty, Capt. Ira A. Allen, Ludlowville; for the purpose of examining recruits and troops in his specialty, Lieut. Abraham Skversky, New York City.

To Fort Wayne, Mich., for duty from Fort Benjamin Harrison, Lieuts. John J. Lancer and Milton R. Walter, New York City.

To Langley Field, Hampton, Va., Aviation School, for duty, from Newport News, Va., Lieut. Joseph C. Coleman.

To Mineola, L. I., N. Y., Signal Corps, Aviation School, Hazlehurst Field, from Aero Squadrons at Fort Wood, N. Y., for duty, Lieut. Scott R. Fisher, Syracuse.

To Neurological Institute, New York City, for a course of intensive study in his specialty, Capt. Ira Cohen, New York City.

To Newport News, Va., for duty with the 302d Stevedore Regiment, Capt. Charles W. Selover, Stanley; Lieuts. Emanuel M. Freund, Albany, and Benjamin H. Dike, Rochester.

To New York City, Islip, Long Island, Nyack, Harmon, Peekskill, Tuxedo, N. Y.; Norwalk, Conn.; Iselin, N. J., for inspecting hospital sites and then return to proper station, Major Thomas W. Salmon.

To New York City, for a course of instruction in orthopedic work and upon completion of this course to return to his proper station, from Fort Oglethorpe, Capt. Lee B. Meyer, New York City.

To Rockefeller Institute, New York City, from Fort Benjamin Harrison, for instruction and upon completion of this course to return to his home and to inactive list of the Medical Reserve Corps, Lieut. Henry L. Wenner, Jr., New York City.

To St. Elizabeth Hospital, Washington, D. C., for a course of intensive study in his specialty, Lieut. John Miller, New York City.

To St. Louis, Mo., School of Plastic and Oral Surgery, Washington University, from Fort Benjamin Harrison, for three weeks' intensive training, Capt. Robert T. Frank, New York City.

To Walter Reed General Hospital, Takoma Park, D. C., for duty as surgical assistant, Lieut. Maurice D. Barnette, Watertown.

To Washington, D. C., and report in person to the Surgeon-General of the Army for duty in his office, Major Thomas W. Salmon, New York City.

To Washington University, St. Louis, Mo., for three weeks' intensive training, Capt. Samuel L. Fisher, Brooklyn; Lieut. John L. Edwards, Hudson; from Fort Slocum, N. Y., and upon completion to return to his proper station, Lieut. Richard T. Atkins, New York City.

To his home from duty at Camp Merritt, N. J., and return to the inactive list of the Medical Reserve Corps of the Army on account of being physically disqualified for active service, Capt. Daniel W. Wynkoop, Babylon.

To his home and the inactive list of the Medical Reserve Corps from duty at Fort Monroe, Va., on account of being physically disqualified for active service, Lieut. Edward D. Fraser, Brooklyn.

NEW MEXICO

To Camp Cody, Deming, N. M., for duty, Capt. Henry R. Brown, Albuquerque.

To Camp Lewis, American Lake, Wash., for duty as tuberculosis specialist and member of the Army Medical Staff, Capt. David C. Twichell, Albuquerque.

NORTH CAROLINA

To Camp Gordon, Atlanta, Ga., for duty as chief of the surgical service, Capt. James S. Brown, Hendersonville.

To Camp Greene, Charlotte, N. C., and report in person to the commanding general and to the commanding officer of the base hospital for duty in the division of plastic and oral surgery, section of surgery of the head, Lieut. Charles W. Banner, Greensboro.

To Camp Sevier, Greenville, S. C., for duty in connection with orthopedic work, Lieut. Robert A. Moore, Charlotte.

To Fort Moultrie, S. C., for duty, Lieut. Mont R. Farrar, Greensboro.

To Fort Oglethorpe for instruction, Lieuts. Carl W. Bell, Raleigh; Edgar P. Norfleet, Roxobel; Thomas H. Royster, Tarboro; John B. Powers, Wake Forest; William T. Ruark, Wilmington.

To Richmond Medical College for a course in military roentgenology, Lieut. Henry C. Turlington, Cooper.

To Walter Reed General Hospital, Takoma Park, D. C., for duty, Lieut. Matthew L. McCorkle, Newton.

To his home and return to the inactive list of the Medical Reserve Corps of the Army, on account of being physically disqualified, Lieut. Joseph R. Shull, Cliffside.

NORTH DAKOTA

To Camp Dodge, Des Moines, Ia., for duty, Lieuts. Julius O. Arnson, Bismarck; Mark Mizener, Bowman.

To Fort Oglethorpe for instruction, Lieut. Howard L. Saylor, Cogswell.

To State Psychopathic Hospital, Ann Arbor, Mich., for intensive study in his specialty, Capt. Adolphus W. Guest, Jamestown.

OHIO

To Camp Bowie, Fort Worth, Tex., for duty, Lieut. Douglas R. Venable, Cleveland.

To Camp Cody, Deming, N. M., for duty, Capt. Henry R. Brown, Chillicothe.

To Camp Funston, Fort Riley, Kan., for duty, from Medical Officers' Training Camp, Lieuts. William M. Goff, Marysville; Myron Hanna, Scott.

To Camp Sherman, Chillicothe, O., for duty, Capt. Elmore E. Adel, Columbus; Lieuts. Daniel C. Handley, Cincinnati; George F. Glass, Cleveland; Edward D. Harper, Guysville; for temporary duty, Anthony Matuska, Cleveland; Clark E. Sharp, Columbus.

To Fort Oglethorpe for instruction, Capt. Paul G. Woolley, Cincinnati; Claude D. Hamilton, Canton; Charles G. LaRocco, Lewis A. Oster, Cleveland; Harold K. Mouser, Marion; Neville E. Stewart, Wauseon; William McG. Blaine, Youngstown.

To Fort Sheridan, Ill., for duty, Capt. Joseph S. Rardin, Portsmouth.

To Jefferson Barracks, Mo., for duty, Capt. Harry T. Miller, Springfield.

To Washington University, St. Louis, Mo., for three weeks of intensive training, from Allentown, Pa., Capt. Frederick J. Bierkamp, Youngstown.

OKLAHOMA

To Camp Bowie, Fort Worth, Tex., for duty, from Base Hospital, Lieuts. George M. McVey, Verden; Will W. Jackson, Vinita.

To Camp Doniphan, Fort Sill, Okla., for duty, Lieut. John B. Haggard, South Coffeyville.

To Camp MacArthur, Waco, Tex., for duty in charge of the division of brain surgery, section of surgery of the head, Capt. Robert M. Howard, Oklahoma.

To Camp Merritt, N. J., for duty, from Army Medical School, Lieut. Davy Lewis Garrett, Altus.

To Camp Vail, Little Silver, N. J., for duty with the 11th Telegraph Reserve Battalion, Lieut. Willis K. West, Oklahoma.

To Fort Oglethorpe for instruction, Lieuts. Samuel T. Campbell, Anadarko; James R. Bost, Cashion; Roland R. Culbertson, Hoyt.

To Kansas City, Mo., for course of instruction in military roentgenology from Ft. Riley, Lieut. Daniel E. Little, Eufaula.

To report in person to the commanding general, Camp MacArthur, Tex., for duty in the surgical service, Lieut. William G. Hushund, Gould.

OREGON

To Camp Dodge, Des Moines, Ia., from Fort Riley for duty, Capt. Joseph A. Pargon, Portland.

To Camp Lewis, American Lake, Wash., for duty, Lieut. Arthur C. McCown, Cove.

To Fort Oglethorpe for instruction, Lieut. Harry M. Bouvy, La Grande.

To Washington University, St. Louis, Mo., for a three weeks' course of intensive training, Capt. Justin M. Waugh, Hood River.

To report in person to the commanding general, Camp Lewis, American Lake, Wash., for duty as assistant in the surgical service, Capt. Paul Rockey, Portland.

PENNSYLVANIA

To Buffalo, N. Y., Rochester, N. Y., Barre, Vt., Manchester, N. H., Brooklyn, N. Y., for duty in connection with the Medical Reserve Corps of the Army and on completion of this duty to return to his proper station, Major Henry D. Jump, Philadelphia.

To Camp Dix, Wrightstown, N. J., for duty, Lieut. James E. James, Plymouth.

To Camp Dodge, Des Moines, Ia., from Fort Riley, for duty, Lieut. William H. Kober, Pittsburgh.

To Camp Grant, Rockford, Ill., for duty with 35th Engineer Regiment, from Fort Oglethorpe, Lieut. Clark H. Yeager, Wilkes-Barre.

To Camp Hancock, Augusta, Ga., for duty in the surgical service, after completion of course of instruction at Rockefeller Institute, New York, N. Y., Capt. David H. Boyd, Pittsburgh; for duty as member of board of medical officers for tuberculosis examination, from Walter Reed General Hospital, Lieut. William G. Spalding, Cresson.

To Camp Lee, Petersburg, Va., for duty, Lieuts, Llewellyn I. Thomas, Burnham; Charles B. Dotterrer, Boyertown; Adam M. Robinhold, Hamburg; for temporary duty, Herbert F. Kenny, Pittsburgh.

To Camp Meade, Annapolis Junction, Md., for duty, Capt. Edward M. Haley, Blossburg; Lieut. Charles S. Fox, Philadelphia.

To Camp Mills, Garden City, L. I., for duty at Base Hospital, from duty at Field Hospital No. 3, Lieuts. George H. Tibbins, Beach Creek; for duty, Lieut. William W. Van Dolson, Philadelphia.

To Camp Pike, Little Rock, Ark., for the purpose of examining troops in his specialty, Capt. Percy DeLong, Cynwyd.

To Camp Sevier, Greenville, S. C., for duty in the Division of otolaryngology, section of surgery of the head, from duty at Base Hospital, Major George M. Coates, Philadelphia.

To Camp Vail, Little Silver, N. J., for duty, Lieut. John V. Kearney, Philadelphia.

To Camp Wheeler, Macon, Ga., for regimental duty, from Fort Oglethorpe, Lieuts. Nicholas E. Abbaticobio, Bert F. Ober, Latrobe; Charles M. McCoy, Lewistown; Amos K. DuBell, William H. McKeever, Philadelphia; Frank R. Wheelock, Scranton.

To Chicago, Ill., for the purpose of conferring with the State Committee of National Defense Medical Section, and upon completion of this duty to return to his proper station, Major Henry D. Jump, Philadelphia.

To Fort McPherson, Ga., for duty at the Base Hospital, Capt. Earl D. Bond, Philadelphia; Victor J. P. Jourdan, Bristol.

To Fort Oglethorpe for instruction, Capt. John F. McCloskey, Philadelphia; Lieuts. Andrew J. W. Hanwork, Altoona; Carlos P. Holcomb, Athens; Thomas I. Cotton, Carnegie; Ray H. Parker, Ehrenfeld; John P. Maus, Norristown; Toby Anthony Creco, Philadelphia; Burns S. Chaffee, John E. Newhouse, Dennis E. Szabo, Pittsburgh; Howard S. Smith, Reinholds Station; Le DeLance Parry, Rock Glen; Albert J.

Winebrake, Scranton; James G. Strickland, Shamokin; for instruction after completion of course at Rockefeller Institute, New York, Hubley R. Owen, Philadelphia; for duty with the 51st Infantry, from Medical Officers' Training Camp, Frederick B. Allen, Worth Wales.

To Fort Slocum, N. Y., for duty, Lieut. Charles H. Cloud, Philadelphia.

To Jefferson Hospital, Philadelphia, for a course of instruction in military roentgenology, Lieut. Agnew F. Frankhauser, Philadelphia.

To Madison Barracks, New York, for duty, Capt. Sidney K. Fenollosa, Pittsburgh.

To Mineola, L. I., N. Y., Signal Corps, aviation school, Hazlehurst Field, from aero squadrons at Fort Wood, N. Y., for duty, Lieuts. James E. Dull, Somerset; Forest A. Beck, Wind Gap.

To Newport News, Va., for duty with 303d Stevedore Regiment, from Fort Oglethorpe, Lieuts. Charles J. Shillott, Columbia; Wilbur E. Turner, Montgomery.

To Pittsburgh, in charge of the physical examining unit, aviation section, Signal Officers Reserve Corps, Capt. William C. Meaner, Pittsburgh.

To Richmond Medical College, Richmond, Va., for a course of instruction in military roentgenology, Lieut. William B. Trexler, Fullerton.

To Rockefeller Institute, New York, N. Y., for instruction, from duty at Fort Benjamin Harrison, and on completion of this course to proceed to Washington University, St. Louis, Mo., for further instruction, Capt. Ernest M. Vaughan, Royersford.

To report in person to the commanding officer repair shop unit, Quartermaster's Corps, Washington, D. C., for duty, from Army Medical School, Lieut. Maurice V. Brant, Cairnbrook.

To University of Pennsylvania, Philadelphia, for duty in connection with the investigation of treatment of infected wounds, Capt. William H. Furness, Wallingford.

To Washington University, St. Louis, Mo., for three weeks' course of intensive training, Lieuts. William Bates and Irvine M. Boykin, Philadelphia.

To their homes and return to the inactive list of the Medical Reserve Corps, Majors Walter S. Cornell and John H. Jopson, Lieuts. Charles S. Rottner, Philadelphia; John J. Dailey, McAdoo.

Honorably discharged from Medical Reserve Corps on account of holding commissions in the Pennsylvania National Guard, Majors George M. Coates and Ross H. Skillern, Philadelphia; on account of being physically disqualified for active service, Lieut. George H. Tibins, Beech Creek.

PHILIPPINE ISLANDS

To Camp Gordon, Atlanta, Ga., from Fort Russell, Wyo., for the purpose of examining the troops in his specialty, Lieut. Louis V. J. Lopez, Silay.

To Philippine Islands, Philippine Dept., for duty, Capt. Almon P. Goff, Manila.

SOUTH CAROLINA

To Camp Grant, Rockford, Ill., for duty with 35th Engineer Regiment from Fort Oglethorpe, Lieut. James M. Oliver, Orangeburg.

To Camp Wheeler, Macon, Ga., for duty in charge of the division of brain surgery, section of surgery of the head, Capt. Samuel C. Baker, Sumter.

To Fort Des Moines, Ia., for instruction, Lieut. Dan M. Moore, Enoree.

To Fort Oglethorpe for instruction, Capt. Theodore C. Stone, Aiken; Lieuts. Lawrence R. Kirkpatrick, Bennettsville; Julius D. Eaddy, Lake City; Karl L. Able, Leesville.

SOUTH DAKOTA

To Camp Dodge, Des Moines, Ia., from Fort Riley, for duty, Lieut. Burt A. Dyar, De Smet.

To Camp Funston, Fort Riley, Kan., for duty, from Medical Officers' Training Camp, Lieut. Maurice O. Pemberton, Deadwood.

To Camp Grant, Rockford, Ill., for temporary duty, Lieut. Henry J. T. Ince, Rapid City.

To Fort Oglethorpe, for instruction, Lieut. Willard A. Bates, Northville.

To report in person to the commanding officer of the base hospital for duty, from Camp Bowie, Fort Worth, Tex., Lieut. Glenn V. Sigler, Highmore.

To his home from Camp Pike, Little Rock, Ark., and return to the inactive list of the Medical Reserve Corps on account of being physically disqualified for active service, Lieut. James P. Valby, Viborg.

TENNESSEE

To Camp Dodge, Des Moines, Ia., from Fort Riley, for duty, Lieut. Benjamin G. Allen, Chattanooga.

To Camp McClellan, Anniston, Ala., for duty in charge of the division of brain surgery, section of surgery of the head, Major Lucius E. Burch, Nashville.

To Camp Meade, Annapolis Junction, Md., for temporary duty, Lieut. Allen L. Lear, Sewanee.

To Camp Vail, Little Silver, N. J., for duty, Lieut. Cleveland Payne, Oakland.

To Camp Wheeler, Macon, Ga., for duty with Ambulance Companies, from Fort Oglethorpe, Lieut. Joseph P. Delabet, Arrington.

To Fort Oglethorpe for instruction, Capt. Bernard C. McMahon, Memphis; George A. Hatcher, Nashville; Leslie T. Bolton, Lucy; Maurice L. Connell, Ridgetop; with 23d Cavalry (F. A.) from Medical Officers' Training Camp, Samuel S. Caruthers, Nashville.

To Newport News, Va., for duty with 304th Stevedore Regiment from Fort Oglethorpe, Lieut. George R. McSwain, Paris.

To his home and honorably discharged from duty at Fort Des Moines, Ia., Lieut. William G. Raby, Memphis.

TEXAS

To Camp MacArthur, Waco, Tex., for duty as a member of a board of officers for tuberculosis examinations, Lieut. John T. Bernard, Dallas.

To Camp Travis, Fort Sam Houston, Tex., for temporary duty, Lieuts. Edgar V. Henry, Coleman; for duty, Sneed Strong, Dallas; Thomas H. Standlee, Lyra.

To Fort Oglethorpe for instruction, Capts. Jesse L. Womack, Lolita; Thomas A. Martin, Lorane; Lieuts. Dana E. Monro, Cameron; Edward J. Burns, Carrizo Springs; Talbert M. Hall, Osage; David C. Williams Post; Earl L. Sharp, Willis.

To Fort Sam Houston, Tex., for duty, Lieut. Thad Shaw, San Antonio.

To New York, and report in person to Major F. H. Albee, 40 E. 41st Street, New York, for a course of instruction, from Rockefeller Institute, New York, Major Charles S. Venable, San Antonio.

To report by telegraph to the commanding general Southern Dept., for assignment to duty, Lieut. William C. Barnard, Corpus Christi.

Honorably discharged on account of inaptitude for the service, Lieut. Squire M. Henry, Southland.

UTAH

To Fort Oglethorpe for instruction from Allentown, Pa., Lieut. James M. Graham, Fruita.

To his home, and return to inactive list of Medical Reserve Corps, on account of being physically disqualified for active service, from Letterman General Hospital, Presidio of San Francisco, Capt. Thomas A. Flood, Salt Lake City.

VERMONT

To Boston, for instruction in military roentgenology, Lieut. Frank C. Angell, Rudolph.

VIRGINIA

To Boston, Mass., for a course of instruction in orthopedic surgery, Lieut. Samuel B. Cary, Roanoke.

To Camp Greene, Charlotte, N. C., for duty in charge of the division of brain surgery, section of surgery of the head, Capt. Lomax Gwathmey, Norfolk.

To Fort Monroe, Va., for duty in division of ophthalmology and otolaryngology, section of surgery of the head, Lieut. Frank D. Willis, Newport News.

To Fort Oglethorpe, Ga., for instruction, Capt. Stanley H. Graves, Norfolk, and Lieut. Leslie T. Rusmiselle, Lovettsville.

To Richmond Medical College, Richmond, Va., for a course of instruction in military roentgenology, Lieuts. John L. Tabb, Jr., Midlothian; Fayette A. Sinclair, Newport News; and Samuel A. Rhyne, Norfolk.

To Washington University, St. Louis, Mo., School of Plastic and Oral Surgery, for three weeks' course of intensive training, Lieut. Forsey G. Tyler, Richmond.

WASHINGTON

To Camp Lewis, American Lake, Wash., for duty as assistant chief of the medical service, Capt. Charles S. Wilson, Tacoma; for duty, Capts. Robert N. Tooker, Seattle; and Ira A. Nelson, Spokane; Lieut. Charles R. McCreery, Tacoma; for duty as Chief of the Surgical Service, from duty at Base Hospital, Lieut. Horace J. Whitacre, Tacoma.

To Camp Robinson, Sparta, Wis., for duty with the 17th Field Artillery, Capt. Ira C. Brown, Seattle.

To report in person to the commanding officer, Repair Shop Unit, Quartermaster's Corps, Washington, D. C., for duty, from Army Medical School, Capt. Francis W. Anderson, South Bend.

WEST VIRGINIA

To Camp Funston, Fort Riley, Kan., for duty, from Medical Officers' Training Camp, Lieut. Charles N. Brown, Elizabeth.

To Fort Oglethorpe, Ga., for instruction, Capt. David Hott, Morgantown; Lieuts. Harvey C. Powell, Morgantown; and Harold H. Talbott, Weirton.

WISCONSIN

To Camp Beauregard, Alexandria, La., for the purpose of making examinations in his specialty, and upon completion of this duty to return to his home and to the inactive list of the Medical Reserve Corps, Capt. Oscar E. Lademan, Milwaukee.

To Camp Dodge, Des Moines, Ia., from Fort Riley, for duty, Lieuts. Donne F. Gosin, Greenbay; James C. Tyvand, Whitehall; and Howard C. Miller, Whitewater.

To Camp Funston, Fort Riley, Kan., for duty, from Medical Officers' Training Camp, Lieuts. Judson A. Palmer, Arcadia; Frederick N. Ferguson, Elroy; William A. Joseph, Hancock; Norman O. Nelson, Madison; Richard W. A. Dehmel, South Germantown; and George R. Baker, Tomahawk.

To Camp MacArthur, Waco, Tex., from Fort Riley, for duty in the division of plastic and oral surgery, section of surgery of the head, Lieut. Max Bornstein, Milwaukee.

To Camp Robinson, Sparta, Wis., for duty, Lieut. Thomas C. Clarke, Oconto.

To Colon Hospital, for duty, from Fort Randolph, Canal Zone, Lieut. Robert L. Bowen, Oshkosh.

To Fort Oglethorpe, Ga., for instruction, Lieut. G. H. Schlenker, Cazenovia.

To Neurological Institute, New York City, for a course of intensive training in his specialty, Lieut. Smiley Blanton, Madison.

To Washington University, St. Louis, Mo., for three weeks' intensive training, from Fort Riley, and upon completion to return to his proper station, Capt. Gustaf R. Egeland, Sturgeon Bay.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Bill Compromised.—For work done in connection with the threatened epidemic of spinal meningitis in the naval training camp at Balboa Park, San Diego, the city health authorities rendered a bill for $1,500 against the United States government. The bill occasioned considerable discussion by the members of the health board and the naval authorities. It was finally compromised by the government paying the city $650.

Personal.—Dr. T. Brailsford Robertson, professor of biochemistry and pharmacology in the University of California, has donated to the university his patent rights in the product "Tethelin," isolated from the anterior lobe of the pituitary body and believed to control growth of cells, and to be capable of accelerating repair in slowly healing wounds. All profits resulting from this discovery are to constitute an endowment, the income to be applied to medical research.——Dr. Alfred E. Banks, health officer of San Diego, has resigned and resumed private practice. He has recommended that Dr. William W. Crawford be appointed his successor.——Dr. Ralph W. Nauss, Fresno, the newly appointed state district health officer, has established headquarters for the central district in Fresno.

GEORGIA

Personal.—Dr. William L. Funkhouser has moved from Rome to Atlanta, and will devote himself exclusively to the treatment of children.——Dr. John E. Toole has been elected mayor of Bainbridge.——Dr. Albert Fleming, Waycross, has been reappointed a member of the State Board of Examiners.

Tuberculosis Clinic in Savannah.—The Central Council of Charitable and Philanthropic Organizations of Savannah has advocated the immediate establishment of a free tuberculosis clinic in Savannah, and a committee, whose chairman is Rev. S. B. McGlohan, will act with a committee from the Georgia Medical Society, headed by Dr. James O. Baker, for the accomplishment of this much needed charity.

IDAHO

Personal.—Dr. Joseph H. Murry, surgeon of the Oregon Short Line Railroad, Nampa, has resigned, and Dr. Frank B. Smith has been appointed his successor.

Contract Let for Sanatorium.—The contract for the construction, completion and equipment of the main building of the Idaho State Sanatorium, Nampa, has been awarded for $23,800.

ILLINOIS

Personal.—Dr. Alice Barlow Brown, Winnetka, has arrived at Toulouse, France, where she is to establish a free dispensary for women and children which is supported by the women of Winnetka, and the American Fund for French Wounded.——Dr. Max C. Hawley, Elgin, has been appointed superintendent of the Watertown State Hospital.——Dr. George Parker, medical director of the Peoria Life Insurance Company, has entered on the duties of commissioner of health of Peoria, succeeding Dr. Emmett A. Garrett, called to war service.——Dr. Emil Bunta, Chicago, has been appointed a member of the staff of the Oak Forest Infirmary.

INDIANA

New Surgeries Opened.—The north annex and new surgeries of the Methodist Episcopal Hospital, Indianapolis, were formally dedicated, October 14 and 15. The north wing of the hospital was completed last year, but had never been formally dedicated. The new surgical operating rooms have just been completed at a cost of $40,000.

Sanatorium To Do Outpatient Work.—The directors of the Marion County Medical Society for the Prevention of Tuberculosis have decided to buy an automobile for the use of the outpatient department of Sunnyside Sanatorium. This will enable Miss Gaskill, nurse at the head of this department, to visit tuberculosis patients in all parts of the county in order to advise and keep in touch with them after their discharge from the sanatorium.

Personal.—Dr. Abner H. Shaffer, Huntington, fell in his home, October 5, fracturing his hip.——Dr. Lewis P. Drayer, Fort Wayne, has been appointed secretary of the city health board, succeeding Dr. John H. Gilpin, resigned to enter the military service.——Dr. Daniel F. Randolph, Waldron, was seriously injured recently in an automobile accident in Van Buren Township.

Section Officers.—At the recent meeting of the Indiana State Medical Society, Dr. Charles P. Emerson, Indianapolis, was elected chairman of the medical section, and Dr. Jane M. Ketcham, Indianapolis, secretary. Dr. Ludson Worsham, Evansville, was elected chairman of the surgical section, Dr. Goethe Link, Indianapolis, vice chairman, and Dr. Howard O. Shafer, Rochester, secretary.

Memorial to Dr. Bobbs.—At Indianapolis, October 11, in the medical section of the new $6,000,000 library building, a bronze tablet was erected in honor of the memory of Dr. John Stough Bobbs, a pioneer surgeon of Indiana. In the dedication of the tablet, addresses were made by Dr. Henry Jameson, of the Medical Department of the University of Indiana, formerly dean of the Indiana Medical College, founded by Dr. Bobbs; by Louis Howland, editor of the Indianapolis *News*, and by Dr. Hillary Gobin, president of De Pauw University, who was for three years secretary to Dr. Bobbs. Dr. Bobbs was born in 1809 and died in 1870. In addition to the founding of the Indiana Medical College in which he was a teacher until his death, he was also one of the founders of the state medical society, donated a medical library to the physicians of Indiana, endowed a dispensary which is now the Indianapolis City Dispensary, and was a brigade surgeon during the Civil War, and helped to carry from the field and care for wounded soldiers at the Battle of Bull Run. The memorial addresses credited Dr. Bobbs with being one of the great surgeons of America. The bronze tablet, executed by Gutzon Borgulum, is 6 feet by 3½ feet in size, bears in bas relief the figure of Dr. Bobbs, and the following inscription: "Illustrious Surgeon, Patriotic Citizen, Self-Sacrificing Benefactor, Servant of God through Service to Mankind. First to perform the operation of cholecystotomy." That Dr. Bobbs was the originator of the operation of opening the gallbladder is fully attested. The work of securing funds and carrying out the establishment of the memorial was in the hands of a committee consisting of Drs. Henry Jameson, Alembert W. Brayton, William N. Wishard, John H. Oliver and Frank B. Wynn, some of the members having been associates of Dr. Bobbs.

MARYLAND

Typhoid Cases Increase.—Twenty-six new cases of typhoid fever were reported to the Health Department of Baltimore during the week. There were four deaths from the disease. The *Health Bulletin* also reports 189 deaths in Baltimore, for the week, and 300 births.

Personal.—Dr. Archibald C. Harrison, director of the University of Maryland Base Hospital Unit, was recently operated on by Dr. Thomas S. Cullen in St. Joseph's Hospital for acute abdominal trouble.——Miss Mary L. Kelly, assistant superintendent of nurses of the Health Department of Baltimore, has been appointed assistant bacteriologist of the health department.——Dr. Harry F. Shipley, Granite, was seriously injured, September 13, by the overturning of his automobile near Gwynn Oak; he sustained a fracture of the clavicle and two ribs.——Dr. Karl H. Van Norman, formerly assistant superintendent of Johns Hopkins Hospital, who resigned in November, 1915, for war service with the Canadian forces and was placed in charge of a base hospital in Ramsgate, England, and later was made assistant chief of the Canadian hospitals in England, has returned to this country to recuperate, and is in temporary charge of the Canadian recruiting station at Minneapolis.

MASSACHUSETTS

Health Department Moves.—New headquarters have been opened for the state department of health on the fifth floor of the state house, and the water, sewerage, food and drug laboratories are on the same floor.

Personal.—Dr. Philip Castleman has been appointed deputy health commissioner of Boston, and Dr. Honore Van de Velde, assistant director of pathologic laboratories in the health department.——Dr. M. Victor Safford, U. S. P. H. S., has been appointed epidemiologist of the Boston Health

Department.——Lieut. Harry R. Coburn, M. R. C., in charge of the men's department of the Tewksbury State Hospital, was given a farewell dinner, September 7, at which he was presented with a wrist watch.——Dr. Frank H. Carlisle, Wrentham, assistant superintendent of the Norfolk State Hospital, Pondville, for ten years past, has accepted an appointment as medical director of the Massachusetts Farm, Ridgewater.

MICHIGAN

New Officers.—At the annual meeting of the Wayne County Medical Society, held in Detroit, Dr. Warren L. Babcock was elected president, Dr. Clarence E. Simpson, vice president; Dr. Raymond C. Andries, secretary, and Dr. William H. Morley, treasurer.

State Board Members.—The following appointments are announced by the governor for membership in the Michigan State Board of Registration in Medicine: Dr. Guy L. Conner, Detroit, to succeed Dr. Colonel B. Burr, Flint; Dr. William S. Shipp, Battle Creek, to succeed Dr. William T. Dodge, Big Rapids, and Drs. Albertus Nyland, Grand Rapids, and Nelson McLaughlin, Lake Odessa, to succeed themselves.

Personal.—Dr. Edwin R. Vander Slice, Lincoln, for two years physician for the state board of health tuberculosis survery, has been appointed executive secretary of the Michigan Antituberculosis Association.——Dr. Eloise Walker, Binghamton, N. Y., has been appointed physician to the University of Michigan, health service, succeeding Dr. Elsie S. Pratt, Denver.——Dr. Richard M. Olin, secretary of the state board of health, Caro, has moved to Lansing.——Application has been made for a sanitary commission to examine Dr. Ralph E. Gustin, Detroit, who is said have been recently sentenced to serve one year for manslaughter.——Dr. William C. Bell has been appointed police surgeon of Detroit, succeeding Dr. Griffith A. Thomas, resigned to take command of an ambulance company at Fort Sherman, Chillicothe, Ohio.

MINNESOTA

Health League Trains Nurses.—The Minnesota Public Health Association announced that it will expend $8,000 for the training of graduate nurses to do visiting work in towns and rural communities.

Personal.—Dr. George E. Putney, Paynesville, has been appointed a member of the State Board of Medical Examiners, succeeding Dr. Pierre C. Pilon, Paynesville, resigned to enter the Army.——Dr. Arthur T. Laird, superintendent and secretary of the Nopeming Sanatorium, Duluth, has been appointed by the Rockefeller Foundation to do tuberculosis work in France.

Hospital Items.—St. Peter's new hospital, known as the Field Hospital and Sanitarium, was opened for patients, October 1. The formal opening took place a week later. The building at present accommodates fifteen patients, and is under the charge of Dr. Merton Field.——Dr. Philip E. Stangl, formerly of St. Cloud, has assumed charge of the Paynesville Hospital.——Work on the new Itasca County Hospital, Grand Rapids, has been begun, and under the terms of the contract the building must be completed before April 1, 1918.

NEW YORK

Oppose Institution at Lake Mohansic.—For several days the joint legislative committee has been taking testimony in order to reach a decision as to the disposition to make of the 1,000-acre site bought for a state hospital and home for juvenile delinquents. Protests against having any buildings on this site have been made by the commissioner of the board of water supply and representatives of the New York Academy of Medicine, the real estate board, the Safety First Society, the Central Mercantile Association, and by a number of other civic bodies.

New York City

Carpenter Lecture.—The Wesley M. Carpenter lecture was delivered at the New York Academy of Medicine, October 18, by Dr. William J. Mayo, Rochester, Minn., on "The Relation of the Spleen to Some Obscure Clinical Phenomena."

To Organize Vital Economics Work.—John R. Murlin, for eight years assistant professor of physiology in the Medical School of Cornell University, has been appointed director of the new Department of Vital Economics in the University of Rochester. This department has been endowed with funds made available by the will of Lewis E. Ross.

Surgical Conference.—Professor Campbell announces that a surgical conference will be held in the amphitheater of Long Island College Hospital, Brooklyn, every Wednesday afternoon at 3 o'clock. The subject for October 10 was "Hernia."

Draft Physician Punished.—Dr. Henry Seligman, Brooklyn, is said to have been convicted, October 3, of a conspiracy to cause the evasion of the selective draft law, and to have been sentenced to two years' imprisonment in the United States Penitentiary, Atlanta, and to pay a fine of $3,000.

New School for Nurses.—Largely as a result of the appeal of the Council on National Defense that all hospitals in the country increase their educational facilities for training nurses, Bellevue Hospital School for Training Nurses has opened a school for students who do not live at the hospital. There will be no tuition charge, and textbooks and uniforms will be furnished to applicants. The training will cover forty-eight hours each week. The students must have a high school or college education.

Merger of Three Hospitals Planned.—At a conference recently called by Felix M. Warburg and attended by representatives of various city hospitals, plans were considered for merging the three large Jewish hospitals of the Bronx. The plan calls for the erection of a great central hospital building in place of the three separate institutions. It was proposed that a building should be erected to cost at least $500,000 and to accommodate 300 patients. The plan also includes the establishment of dispensaries in different parts of the Bronx. Resolutions were adopted authorizing the appointment of a committee of those interested in the work to make a survey and to work out definite plans.

Personal.—Dr. Isadore Rosen has been appointed instructor in syphilology in the College of Physicians and Surgeons in the City of New York.——Dr. Louis R. Harris, director of the Bureau of Preventable Diseases, has been appointed successor to Dr. Bertram H. Waters, resigned.——Dr. Chester L. Carlisle, formerly senior assistant physician to the King's Park State Hospital, Long Island, has been appointed and has assumed office as superintendent of the Division of Mental Defects and Delinquency of the State Board of Charities, with office at the capital, Albany.——Dr. William G. Bissell, Buffalo, has been elected vice president of the Federated Alumni Association of the University of Buffalo.——Dr. James L. Gallagher, Buffalo, has been reelected supreme medical examiner of the Ancient Order of Foresters for the Atlantic, central and southern states.

OHIO

Personal.—Dr. Allen W. Freeman, U. S. P. H. S., took office, October 1, as the first commissioner of health of Ohio.——Dr. Joseph W. Lehr, Wooster, suffered severe injuries in a collision between an automobile and the buggy in which he was riding, September 30.——Dr. J. Sumner Teter has been appointed city epidemiologist at Toledo, succeeding Dr. Thomas L. Ramsey, resigned.——Dr. Oscar H. Sellenings has resigned as a member of the Columbus Board of Health.——Dr. DeWitt T. McGriff, Lima, has been appointed coroner of Allen County, succeeding Dr. Virgil H. Hay, resigned to enter the military service.——Dr. Leo S. Talaska has been appointed city physician of Toledo, succeeding Dr. J. Sumner Teter.——Dr. William E. Pricer, Ironton, and family have gone to St. Petersburg, Fla.

PENNSYLVANIA

Philadelphia

Personal.—Dr. Thomas McCrae, professor of medicine in Jefferson Medical College, who has been in charge of a large military hospital in England, has returned home and resumed his practice and teaching in Jefferson College and Hospital.——Dr. J. Clarence Keeler has been made assistant professor of otology in Jefferson Medical College.

Army Tuberculosis Unit.—This city has furnished a tuberculosis unit to the government. Twelve experts on diagnosis and treatment have been ordered to proceed to Camp Dix, Wrightstown, to examine the 47,000 drafted men. The physicians who make up this unit are: Drs. Henry R. M. Landis, Robert Shelmerdine McCombs, Frank A. Craig, Charles M. Montgomery, Joseph P. Walsh, Alexander Heron Davisson, Isadore Kaufman, John J. Robrecht, Clarence D. Smith, J.

Clinton Foltz, Elmer H. Funk, all of Philadelphia, and Marcus W. Newcomb, Browns Mills, N. J.

Substitutes for Doctors in War Service.—Drs. William W. Keen, George A. Knowles, James T. Rugh, George D. Fussell and Frederick P. Henry, secretary, 114 South Eighteenth Street, the committee to procure substitutes for physicians ordered in service requests all who are going to the front to notify the secretary of the committee of the names and residences of those who are to take charge of their practice during their absence. In case they have difficulty in procuring substitutes, the committee will be glad to assist them in making such arrangements. The committee would suggest to doctors leaving for the front that they inform their patients who their substitutes are and post on the doors of their offices the names and residences of such substitutes.

WEST VIRGINIA

Personal.—Drs. Robert U. Drinkard, John W. Gilmore, Andrew J. Wilson and Charles M. Truschel, Wheeling, have been selected as members of the visiting staff of the View Point Sanitarium, Wheeling.

Semi-Centennial of Medical Society.—The West Virginia State Medical Association held its fiftieth annual meeting at Fairmont, October 2 to 4, under the presidency of Dr. Joseph E. Rader, Huntington. Berkeley Springs was selected as the next place of meeting, and the following officers were elected: president, Dr. Samuel R. Holroyd, Athens; vice presidents, Drs. Charles O'Grady, Charleston; William J. Judy, Belleville, and Charles W. Waddell, Fairmont; secretary, Dr. J. Howard Anderson, Marytown; treasurer, Dr. Hugh G. Nicholson, Charleston; counsellors, first district, Dr. Henry R. Johnson, Fairmont; second district, Dr. Theodore K. Oates, Morgantown; third district, Dr. Chester R. Ogden, Clarksburg; fourth district, Dr. George D. Jeffers, Parkersburg; fifth district, Dr. James E. McDonald, Logan; sixth district, Dr. Horace L. Goodman, McKendree; delegate to the American Medical Association, Dr. F. LeMoyne Hupp, Wheeling, and editor of the journal of the association, Dr. James R. Bloss, Huntington.

WISCONSIN

Society Moves.—The Milwaukee Medical Society has moved into its new quarters in the Colby-Abbott building, and has transferred its library and reading rooms to the new home. The rooms were formally dedicated, October 7.

Personal.—Dr. Frederick M. Harris has resigned as full-time health commissioner of Fond du Lac, and director of the Fond du Lac Cooperative Laboratory.——Dr. Lewis J. Daniels has been appointed health commissioner of Milwaukee, succeeding Dr. George C. Ruhland, who has entered the United States service.

Hospital Notes.—Through the efforts and generosity of Dr. John G. Meachem, the establishment of a children's hospital in Racine has been made possible. Dr. Meachem has purchased a house south of the maternity home on Wisconsin Street, and has given it to St. Luke's Hospital and the Alice Horlick Hospital for a term of years, free of rent and taxes. The building will accommodate seventeen patients.——Sunny Rest Sanitarium, erected four years ago by Racine County at a cost of $35,000, is found to be in need of immediate repairs which will cost more than $5,000.

State Medical Society Meeting.—The State Medical Society of Wisconsin held its annual meeting in Milwaukee, October 3 to 5, under the presidency of Dr. Hoyt E. Dearholt, Milwaukee. The following officers were elected: president, Dr. Gustave Windesheim, Kenosha; vice presidents, Drs. Oscar Lotz, Milwaukee; Thomas W. Nuzum, Janesville, and Karl W. Doege, Marshfield; secretary, Dr. L. Rock Sleyster, Waupun (reelected); treasurer, Dr. Sidney S. Hale, Ripon (reelected); a delegate to the American Medical Association, Dr. Charles H. Lemon, Milwaukee; alternate, Dr. Wilson Cunningham, Platteville, and counsellor of the ninth district, Dr. Joseph F. Smith, Wausau; Dr. Louis M. Warfield, Milwaukee, was elected president, and Dr. Joseph S. Evans, Madison, secretary of the medical section; Dr. Edward W. Quick, Milwaukee, president, and Dr. Daniel Hopkinson, Milwaukee, secretary of the surgical section, and Dr. Sidney S. Hall, Ripon, president, and Dr. Joseph J. Bellin, Green Bay, secretary of the eye, ear, nose and throat section.

CANADA

Personal.—Major William John O. Malloch, Toronto, who returned to England from Saloniki with the Toronto University Base Hospital, has been appointed surgeon-in-chief of the Ontario Military Hospital, Orpington, England.——Lieut.-Col. Thomas Bedford Richardson, Toronto, who has been medical officer to the British-Canadian War Mission, Chicago, has been recalled to Canada, and has been appointed to the staff of the Canadian Pension Board at Ottawa.——Lieut.-Col. P. Walter H. McKeown, Toronto, overseas for over two years, is temporary O. C., Kitchener Hospital, Brighton, England.——Major Donald McGillivray, Toronto, on three months' leave of absence, has not yet fully recovered his health as to permit him to return to England for hospital duty.——Major William J. Clark, Toronto, of the Ontario Military Hospital, Orpington, England, is home on three months' leave of absence.——Hon. Dr. William J. Roche, Minnedosa, Manitoba, who was a member of the late Borden government, has been appointed head of the Canadian Civil Service Commission, but at the present time is in a hospital, seriously ill.——Capt. Brefney R. O'Reilly, Toronto, will accompany the Canadian and American aviators to Texas for winter training. Dr. O'Reilly is medical officer to the Canadian Flying Corps.

Canadian Military Hospitals Commission.—There are now fifty-seven institutions operated directly by the Canadian Military Hospitals Commission, fourteen others at which definite accommodations are available, apart from the hospitals for the insane, and twenty-three hospitals where men may be sent for active treatment.——The commission has under control sixteen hospital cars for transportation of the men from hospital ships to their inland destination. It is expected from 1,200 to 1,500 soldiers will now be returning every month.——Arrangements have been made recently whereby the Canadian Army Medical Corps contributes to the medical service of the commission. The following are the special classes, including specialists, in the following branches: general practice; tuberculosis; orthopedics; mental diseases; eye, ear and throat diseases; dental; massage; electrical treatment; physical drill, and rheumatic treatment. ——The Oakhill Military Convalescent Hospital, St. Catherines, Ont., is specially assigned for rheumatic cases. British Columbia has several; Winnipeg, one.——There are two classes of mental disability. The Ontario Military Hospital at Coburg, Ont., will be retained entirely for shell-shock cases, and arrangements have been made to open at Newmarket, Ont., an institution for the insane.——The commission only has one factory thus far for the manufacture of artificial limbs, that in North Toronto, but in the near future other manufactories will be established in different parts of Canada.

GENERAL

Eye, Nose and Throat Specialists to Meet.—The twenty-second annual meeting of the American Academy of Ophthalmology and Oto-Laryngology will be held in Pittsburgh, October 29 and 30, under the presidency of Dr. William L. Dayton, Lincoln, Neb.

National Housing Conference.—The sixth National Conference on Housing in America was held in Chicago, October 15 to 17, under the auspices of the National Housing Association, in cooperation with the city of Chicago, and the Chicago Civic and Social Service Organization. Among the chief topics for discussion were, "Chicago's Housing Problem," "Industrial Housing," and a symposium on housing famines.

Bequests and Donations.—The following bequests and donations have recently been announced:

Dr. John B. Briggs, Hartford, Conn., one-half the estate of Mrs. James E. Nichols, amounting to nearly half a million dollars.

To establish the Dr. James M. Ferguson Home for worthy poor and homeless white persons of El Paso County, Colo., the estate of Dr. James M. Ferguson, valued at about $20,000.

George F. Geisinger, Memorial Hospital, Danville, Pa., an endowment of $1,000,000, by Mrs. Abigale E. Geisinger.

The Alvarenga Prize.—The College of Physicians of Philadelphia announces that the Alvarenga Prize for 1917 has been awarded to Dr. Wilbur C. Davison, Baltimore, for his essay entitled "The Superiority of Inoculations with Mixed Triple Vaccine (*B. typhosus, B. paratyphosus* A and *B. paratyphosus* B). Over Successive Inoculations with the Single Vaccines, as Shown by Agglutinin Curves in Men and Rabbits." The next award of the prize, being the income for one year of the bequest of the late Señor Alvarenga, amounting to about $250, will be made, July 14, 1918, provided an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays for competition may be on any subject in medicine, but cannot have been published. They must be typewritten, and if written in a language other than

English, should be accompanied by a translation. They must be received by the secretary, Dr. Francis C. Packard, 19 South Twenty-Second Street, Philadelphia, on or before May 1, 1918. Essays must not be signed, but must be marked with a motto, and accompanied by a sealed envelope having on the outside the motto, and inside the name and address of the author.

Meeting of Clinical Congress of Surgeons.—Special arrangements have been made for the evening sessions of the meeting of the Clinical Congress of Surgeons in Chicago, October 22 to 26. The programs of these sessions will be devoted especially to war subjects. As corrected to date of going to press, it is as follows:

MONDAY, OCTOBER 22, 8:15 P. M., ORCHESTRA HALL

Address by Chairman of Committee on Arrangements ..... A. J. Ochsner, M.D., Chicago
Remarks of Retiring President ..... Fred B. Lund, M.D., Boston
Inauguration of President-elect ..... John G. Clark, M.D., Philadelphia
The General Medical Board of the Council of National Defense ..... Franklin H. Martin, M.D., Chicago
Presentation of, and remarks by:
Hon. Josephus Daniels, Secretary of the Navy.
Surgeon-General William C. Gorgas, U. S. A.
Surgeon-General William C. Braisted, U. S. N.
Surgeon-General Rupert Blue, U. S. P. H. S.
Colonel T. H. Goodwin, Representative of the Director-General, British Army Medical Service.
Colonel C. Dercle, Representative of Medical Department, French Army.
Major Charles H. Mayo, M. R. C., President, American Medical Association.
Observations upon the Medical Service of the British Army ..... Sir Berkeley Moynihan, Leeds, Eng.
The Work of the American Units in France, ... George W. Crile, M.D., Cleveland.

TUESDAY, OCTOBER 23, 8 P. M., GOLD ROOM, CONGRESS HOTEL

Symposium: Sanitation and Sepsis—
The Work of the Army Surgeon..Surg.-Gen. Wm. C. Gorgas, U. S. A.
The Work of the Navy Surgeon..Surg.-Gen. Wm. C. Braisted, U. S. N.
In the Training Camps ..... Col. E. L. Munson, M. C., U. S. A.
Military Laboratories ..... Col. F. F. Russell, M. C., U. S. A.
Symposium: Antiseptics—Edward Martin, M.D., Philadelphia; H. D. Dakin, M.D., New York; E. H. Dunham, M. D., Philadelphia; Alexis Carrel, M.D., New York; Wm. O'Neill Sherman, M.D., Pittsburgh; W. Estell Lee, M.D., Philadelphia.
Extra Cantonment Zones ..... Raymond D. Fosdick, New York
The Control of Venereal Diseases..Wm. F. Snow, M.D., Washington

WEDNESDAY, OCTOBER 24, 8 P. M., GOLD ROOM, CONGRESS HOTEL

Symposium: Military Surgery and the Specialties—
General Surgery ..... Maj. Charles H. Mayo, M. R. C., Rochester
Reconstruction Surgery ..... Maj. Edgar King, M. C., U. S. A.
Head Surgery ..... Maj. Walter R. Parker, M. R. C., Detroit
Brain Surgery ..... Capt. Charles Bagley, Jr., M. R. C., Baltimore
Ophthalmic Surgery ..... Maj. James Bordley, Jr., M. R. C., Baltimore
Surgery of the Ear, Nose and Throat ..... C. W. Richardson, M.D., Washington
Oral Surgery ..... Maj. Vilray P. Blair, M. R. C., St. Louis
Orthopedic Surgery ..... Maj. E. G. Brackett, M. R. C., Boston

THURSDAY, OCTOBER 25, 8 P. M., GOLD ROOM, CONGRESS HOTEL

Presidential Address: The Use of Radium in Gynecology ..... John G. Clark, M.D., Philadelphia
Surgery of the Spinal Cord ..... Charles H. Frazier, M.D., Philadelphia
Discussion by Allen B. Kanavel, M.D., Chicago.
Surgery of the Stomach ..... William J. Mayo, M.D., Rochester, Minn.
Discussion by A. J. Ochsner, M.D., and L. L. McArthur, M.D., Chicago.

FOREIGN

Red Cross Mission in Italy.—The *Policlinico* states that a mission from the American Red Cross is in Rome to study conditions on the Italian front, in the hospitals, etc. They were received and welcomed by Senator Comte Della Somaglia, president of the Italian Red Cross, the prefect of Rome, and other notables.

New Piñero Hospital at Buenos Aires.—The hospital provided for by the bequest of P. Piñero in 1907 has just been opened. There are to be five pavilions, with a capacity of 625 beds. The bequest stipulated that the hospital must be opened to the public before Sept. 12, 1917, but the war has interfered with obtaining materials from Europe and elsewhere, so that only the outpatient department and emergency station as yet are open to the public. Dr. R. Spurr is the chief medical director of the hospital. It is to be in charge of the Asistencia Publica of Buenos Aires, the central organization of all institutions devoted to the care of the sick poor.

Deaths in the Profession Abroad.—**F. W. Kidd,** professor of obstetrics at the University of Dublin, at one time president of the Irish Medical Association and member of the council of the British Gynecological Society.——**R. Oeri,** Basel, aged 68.——**M. F. Escudero,** prominent surgeon of Buenos Aires, aged 43.——**B. Hernandez,** Madrid, in charge of the antirabies service there.——**A. Jouty,** who succumbed to fulminating septicemia from an accidental infection incurred in his war service of otorhinolaryngology at Lyons. From recent casualty lists, British: Lieut.-Col. **E. H. Openshaw,** presumably in Mesopotamia; Capt. **B. A. Bull,** Lieut. **D. Anderson,** Capt. **W. J. Evans,** Surgeon **H. A. Potter,** Col. **T. Daly,** assistant director of the medical services, lost in sinking of transport *Arcadian;* Capt. **J. W. S. Wilson,** Fleet Surgeon **E. C. Ward,** Capt. **A. S. Taylor,** Capt. **R. W. Shegog,** Captain **Neligan,** Lieut. **A. G. Dunn,** Capt. **B. Woodhouse,** Capt. **N. G. Chavasse,** awarded the Victoria Cross. In Italy: Lieut. **F. Pittaluga,** Capt. **C. Zucchetti,** Lieut. **A. Buonomo,** Lieut.-Col. **D. Sonnino,** Lieut. **E. de G. di Santa Severina.** In France: Aide-Major **P. Reynaud, A. J. Giordani,** Lieutenant **Duguit,** Captain **Morin,** chief of the hospital at Vadelaincourt, shelled by aeroplanes, one bomb killing him and the soldier on whom he was operating.

PARIS LETTER

PARIS, Sept. 6, 1917.

The Visit of the Uruguay Physicians

A party of medical men from Uruguay are touring the southwestern part of France at present. They started in the Arcachon region, investigating its climatotherapeutic resources. The party was entertained by the Arcachon Medical Society which took them to visit the summer and winter resorts and the headquarters of the society, its collections and its laboratory.

Physicians Victims of Their Devotion

The death of Dr. Leon Bonnet, aged 58, has been reported from Puy-en-Velay. He was one of the first medical men to study the roentgen rays, and he has just paid with his life for his devotion to science and his patients. He contracted the disease to which he succumbed while working with the roentgen rays.

Radiologic science has also to record another victim, Dr. Vaillant, chief of the service of radiology at the Lariboisière hospital. He has just had to have his left forearm amputated because it had become gangrenous under the use of the roentgen rays. During the twenty years that he has been working with these rays he has had a number of accidents. First, several years ago, one and then two fingers of the left hand had to be amputated, and then one finger of the right hand. In spite of the precautions taken, the evil grew constantly worse and the forearm has had to be removed.

The American Red Cross Canteens for Soldiers

The war council of the American Red Cross has decided to expend $700,000 in the organization of canteens and lounging places for the use of French and American soldiers. They are to be close to the front and in the railway stations, and are to be equipped with writing materials, games, facilities for bathing and arrangements for the sale at cost price of small useful articles and comfort supplies.

Physicians and the Coal Card

I have already mentioned in a previous letter the institution of the coal card. The organized physicians of the Seine department, the Syndicat, has appealed to the highest local authorities, calling their attention to the situation as it affects physicians. Their communication says: "As the coal card is to be inaugurated, September 1, it is necessary that the situation as it affects the medical corps must be cleared up before that date. During the discussions preceding the inauguration of the coal card, it was heard that the liberal professions would be granted special privileges, as lawyers and physicians are obliged to have a room in which they receive their clients and a waiting room for them. It is estimated that these rooms would have to be heated on an average four hours a day, that is, omitting Sundays, $4 \times 2 \times 27 = 216$ hours of heating per month, which would have to be added to the amount apportioned for each individual coal card. The medical corps of Paris, not being under the jurisdiction of the Chamber of Commerce, is compelled to apply to the highest local authority, the prefect of the department, to obtain that to which it is entitled. We are convinced, besides, that it is only necessary to call your attention to the needs of the profession to have them recognized and satisfaction granted."

The War

THE MEDICAL SERVICE IN THE ARMY IN MACEDONIA

M. Justin Godart, undersecretary of state for the military medical department, on his return from his recent visit to the eastern firing line, sent the following letter to the commander in chief of the medical forces of the armée d'Orient:

"On my visit to the medical and surgical quarters of the armée d'Orient I saw at the front and even in Saloniki the results of the work and devotion of all the personnel in your command. The difficulties to be overcome, depending on the question of transportation and climatic conditions, were of the most serious kind, and were further aggravated by the colonial character of this war. But thanks to the close collaboration between the military command and your department, it has been possible to effect day by day material improvement both from the practical and from the scientific standpoints.

"Please convey my congratulations and my thanks to every stretcher bearer, nurse (men and women), physician, pharmacist, and administrative official. Far from their native land, they have served their country well, devoting themselves entirely to solicitude and care for the soldiers for whom we can never do too much. The Republic may justly be proud of all of them as well as of those doing the actual fighting."

THE SHELL SHOCK CASES

The report on the mental confusion cases among the men on active service was prepared in collaboration by Drs. Juquelier, Capgras and Bonhomme, and in an important summary of the subject, impossible to do justice to here, they called attention in particular to the following questions: (1) from the point of view of the etiology, the existence of cases of a purely commotional or emotional origin, without the influence of infection or intoxication; (2) the greater gravity of the prognosis in the commotional cases and their complication by sequelae, and (3) the importance of the sequelae, which may include psychoses and secondary psychoneuroses, among which are dementia praecox, masked epilepsy, the syndrome of hyperemotionalism and recurring conditions of oneirism, that is, dreamlike hallucinations while awake, etc.

The discussion bore mainly on points of detail. Dr. Delmas insisted on certain peculiarities of the war confusional state: its equal frequency in the wounded and the nonwounded; the importance among other sequelae of early dementia and the syndrome of hyperemotionalism, and the constant existence of a period of latency at the beginning of the "commotional confusion." Dr. Marie warned against the too early return to duty of the men thus afflicted; Dr. Meige, against errors of diagnosis between confusion and aphasia. Dr. Laignel-Lavastine emphasized the fact that emotional and concussional confusion are produced by a physiologic mechanism, the emotion generating the confusional state through the intermediation of the secretory disturbances which it induces.

THE DISTURBANCE IN THE PUPIL REACTIONS AFTER SHELL SHOCK

At a recent session of the Académie de médecine, Dr. G. Guillain, agrégé professor at the Paris Faculté de médecine and hospital physician, and Dr. J. A. Barré called attention to the changes in the pupil reactions which they had noted in twenty-six cases of concussion from explosion of a large shell without external wound. Sometimes, at first, the pupils are abnormally dilated, and show no reaction to light or accommodation. Usually the mydriasis is of different degrees in the two eyes; sometimes on one side only, sometimes on both there is no response to light; sometimes there is an actual Argyll Robertson sign; in other cases there may be a paradoxical reaction to light. In some of the cases of shell shock the pupils may be merely unevenly dilated without modification of the motor reaction to light or to accommodation. These disturbances in the milder cases of shell shock do not cause much trouble. They are transient, as a rule, lasting from three to fifteen or twenty days and sometimes longer, but they gradually improve and finally disappear completely. They remarked that it is somewhat difficult to understand the pathogenesis of these pupil disturbances. In six of the men, they coexisted with xanthochromia in the cerebrospinal fluid and slight meningeal hemorrhage, but in the majority of cases there was complete absence of any sign of meningeal hemorrhage. When there is a slight meningeal hemorrhage, it might be assumed that the cerebrospinal fluid had been rendered toxic by the products of hemolysis, and that this toxic influence had been felt by the fibers of the nerve roots, either on the centripetal or on the centrifugal path of the reflex, or else the small bacillary clots might have injured the fibers by compression. It seems also as if in many cases there may have been some direct peripheral source for the pupil anomalies, either from actual concussion of the retina or from some local concussion of the ciliary muscle or nerves under the influence of the explosion of the shell. Whatever their pathogenesis, these pupil modifications should be made known. They are by no means exceptional and their causal relations with the concussion seem to be evident.

[The French term *concussion* is used, by some strange twist of the language, exclusively to mean "graft," especially extortion by a public official. Consequently it is never applied, as in English, to denote the condition resulting from a violent shock. They use the term *commotion*, and men suffering from shell shock are called *les commotionés*.

LONDON LETTER

LONDON, Sept. 18, 1917.

The War

AMERICAN PHYSICIANS IN ENGLISH HOSPITALS

In consequence of the shortage of physicians in this country, the War Office is substituting American Army surgeons for civilian physicians that are employed for part time in military hospitals. There are several reasons for this. As stated in a previous letter to THE JOURNAL, the Central Medical War Committee has informed the government that no more physicians can be taken from civil practice. The release of part-time men from the military hospitals will help to ease the strain in civil practice and enable more men of military age to be called up. Moreover, it is held that part-time men, because of the exigencies of their private work, are not a good bargain for the state, and it is always preferable to employ full-time men. Finally, the urgent need of the present time is for orthopedic surgeons, and America is well able to supply these.

PARATYPHOID FEVER AMONG BRITISH PRISONERS OF WAR

A serious outbreak of paratyphoid has occurred among British officer prisoners of war in the hands of the Turks at Yozgad, in Turkey in Asia. The mortality among the rank and file of British and Indian prisoners captured in Kut has been very heavy, amounting almost to 70 per cent. of the men captured. Among the officer prisoners the mortality has been slight, and the latter are being treated as well as the circumstances of their captors allow.

TETANUS IN MILITARY HOSPITALS

The War Office Committee for the Study of Tetanus has published an analysis, compiled by Sir David Bruce, of the cases of tetanus that have occurred in military hospitals which is important, as it shows the effects of treatment. During four successive periods analyzed, the rate of mortality has steadily gone down. In the first period the mortality was 57.7 per cent.; in the second, 49.2; in the third, 36.5. In the fourth period there is a series of 100 cases of which sixty-nine patients recovered, a mortality of 31 per cent. The ratio of cases of tetanus to the number of wounded soldiers treated in home military hospitals was, roughly, six times as high in September, 1914, as it was two months later; and it remained at or about the lower level until the end of 1916. This fall in ratio was undoubtedly dué to a great extent to the introduction of prophylactic injections of antitetanic serum, which took place about the middle of October, 1914.

The cases in the last period show once again that the shorter the incubation period the greater the mortality rate, and vice versa. There were only twelve cases with a short incubation period (that is, up to ten days), and sixty cases with an incubation period of more than twenty-two days; the shortest incubation period was seven days, and the longest 190. Since the beginning of the war there has been a diminution in the number of cases with short incubation periods, and a corresponding increase in the number of cases with long incubation periods. This is a measure of the action of the prophylactic inoculation of antitoxin. Sir David Bruce points out that it is sometimes by no means easy to decide whether a case is one of localized or generalized tetanus. He defines general tetanus as that in which spasticity or rigidity occurs in muscles distant from the site of the wound, trismus being the most common initial symptom. In local tetanus the spasticity or rigidity is confined to the muscles in the neighborhood of the wound. He looks on local tetanus as a much modified variety of the original disease, or even as a new type due to the action of the prophylactic injection. In general tetanus the toxin molecules may be pictured as gaining entrance to the circulation and so reaching all parts of the nervous system. In the last

100 cases, sixty-one were general and twenty-eight local; in the remainder there was doubt. In the sixty-one cases of generalized disease there were twenty-one deaths, a mortality of 34.4 per cent. All the patients with localized tetanus recovered. Trismus was recorded in fifty-four of the generalized cases, opisthotonos in seventeen. With regard to operative interference, the tetanus committee advises that when operations are performed at the site of wounds, even if they are healed, a prophylactic injection of serum should always be given; further, they consider it probably safer to abstain from surgical interference with the wound until the ordinary treatment for tetanus has been carried out, unless there are other and imperative reasons for immediate operation.

When the symptoms of the tetanus have subsided, and the tissues are flooded with antitoxin, then the wound can be opened up and searched for foreign bodies or hidden collections of pus and tetanus bacilli. The analysis of the cases furnishes no evidence either for or against the intrathecal route. In the first year of the war the figures seemed to show that this route was better than others.

ORTHOPEDIC HOSPITALS AND CURATIVE WORKSHOPS IN ENGLAND

Considerable attention is being directed in this country, as in France, to the development of military orthopedic hospitals and curative workshops, which are being established in various parts of the country. In London there is at Shepherd's Bush a military orthopedic hospital with 1,200 beds. Since this hospital was opened in March, 1916, 1,270 men have been discharged, of whom 390 were permanently unfit, 325 were returned to duty, 507 were sent to command depots, and 515 to employments. There are departments for electrotherapeutics, massage and hydrotherapeutics. Curative workshops are being completed which will provide places for over 200 men. The work done includes engineering, electrical work, metal grinding and polishing, felting, tailoring, fancy leather work, carpentering, photography, art iron work, oxyacetylene welding, French polishing, painting and sign writing, metal engraving, coopering, motorcar overhauling, surgical bootmaking and repairing, and splint making. In all of these a high degree of efficiency is attained by the men.

INDIGENOUS MALARIA IN ENGLAND

Indigenous malaria has not been known in England since the early part of last century, when it was prevalent in certain marshy districts and known as marsh fever or ague. However, since the war several cases have been reported, especially among troops. The return of large numbers of men who have contracted malaria in the eastern campaigns means the presence of persons whose blood contains malarial parasites, and as anopheline mosquitoes are also present, the possibility of contagion exists. A case was recently recorded in the *Lancet* of malaria due to the benign tertian parasite in a soldier, aged 20, who had never been outside the British Isles. He was well until he reached a depot to which men who had returned from Saloniki with malaria were drafted. Under the advice of Sir Ronald Ross, the War Office has taken measures to prevent such infection. Patients with malaria will be segregated in special depots and hospitals, and quinin continually administered to soldiers that are likely to remain carriers of malaria. Health officers have been supplied with a memorandum on the subject to be circulated among physicians in order that they may report any cases of fever shown or suspected to be due to malaria, and that inquiries may be made as to the possible source of infection.

Low Birth Rate in Ireland

The fifty-third annual report of the Registrar-General for Ireland, giving statistics for 1916, shows that 22,245 marriages were registered during the year, equivalent to a rate of 5.13 per thousand of the estimated population. This rate is 0.44 per thousand below the rate for 1915, and 0.11 under the average for the ten years 1906-1915. The births registered numbered 91,437, being 21.1 per thousand, which is 1.9 below the average for the ten years 1906-1916. There were 71,391 deaths, equivalent to 16.5 per thousand of the population estimated to the middle of the year. The death rate is 1.1 below that for 1915, and 0.5 below the average rate for the ten years 1906-1915. The number of deaths from all forms of tuberculous disease was 9,323, equivalent to 2.15 per thousand. With the exceptions of 1912, 1913 and 1914, the rate for 1916 was the lowest recorded. The rate for tuberculous diseases in England and Wales during the same period was 1.35.

Marriages

LIEUT. LAVERNE B. SPAKE, M. R. C., U. S. Army, Kansas City, Kan., to Miss Ella Haines Vanneman of El Paso, Texas, June 30.

LIEUT. FRANCIS VINCENT GOWEN, M. R. C., U. S. Army, to Miss Marguerite J. Horan, both of Philadelphia, October 6.

LIEUT. MICHAEL JOSEPH MCCARTHY, M. R. C., U. S. Army, to Miss Blanche Reilly, both of Pottsville, Pa., October 3.

LIEUT. PHILIP MCQUESTEN, M. R. C., U. S. Army, Boston, to Miss Elizabeth Swart of Concord, N. H., September 27.

WILLIAM M. O'SHEA, M.D., Webster, Mass., to Miss Blanche E. M. White of Worcester, Mass., September 25.

LIEUT. LEON SOLIS-COHEN, M. R. C., U. S. Army, to Miss Marion Mansbach, both of Philadelphia, September 30.

SAMUEL RAYMOND FAIRCHILD, M.D., Pennsgrove, N. J., to Miss Ruth Lanahan of Louisville, Ky., September 15.

GAYLORD MCE. ANDREWS, M.D., Stella, Neb., to Miss Elizabeth Bookwalter of Kansas City, Mo., October 2.

CHARLES DIMM DIETTERICH, M.D., Parkerford, Pa., to Miss Aneeda Hill of Collegeville, Pa., September 26.

HENRY ASLOP RILEY, M.D., to Miss Mary Chaplin Edgar, both of New York City, October 6.

GEORGE H. CRAFT, M.D., to Miss Flo J. Redfield, both of Pittsburgh, at Erie, Pa., October 1.

OTIS GUY BACON, M.D., to Miss Bonnie Caley, both of Davidson, Okla., September 21.

EDWIN J. OXFORD, M.D., to Miss Gladys Baker, both of Chambers, Neb., September 30.

MATT R. ROOT, M.D., to Miss Henrietta Ziegle, both of Denver, August 28.

Deaths

Moses Greeley Parker, M.D., Lowell, Mass.; Harvard Medical School, 1864; aged 74; a Fellow of the American Medical Association; consulting oculist to St. John's Hospital, Lowell; assistant surgeon, Second United States Cavalry, during the Civil War; once president of the Middlesex North District Medical Society, and of the Lowell Medical Journal Society; president-general of the National Society of the Sons of the American Revolution, in 1911 and 1912; died at his home, October 2.

Eli Leinbach Klopp, M.D., Philadelphia; Jefferson Medical College, 1889; aged 61; a Fellow of the American Medical Association, and a member of the American Academy of Ophthalmology and Oto-Laryngology; for many years assistant professor of otology in his alma mater; aural surgeon and chief of the nose and throat clinic of the Jefferson Hospital; for ten years a pharmacist; died at his home, Oak Lane, Philadelphia, September 29, from disease of the kidneys.

Allen DeVilbiss, M.D., Toledo, Ohio; Miami Medical College, 1868; aged 75; a Fellow of the American Medical Association; a member of the Mississippi Valley Medical Association, and American Academy of Ophthalmology and Oto-Laryngology, and a trustee of the Lucas County Academy of Medicine; president of the DeVilbiss Manufacturing Company; a veteran of the Civil War; died at his home, October 1, from cerebral hemorrhage.

Thomas P. Russell, M.D., Oshkosh, Wis.; Vermont Medical College, Woodstock, 1852; aged 90; a Fellow of the American Medical Association; said to have been the oldest practitioner of Wisconsin; assistant surgeon of the Second Wisconsin Volunteer Infantry, and later assistant surgeon of the First Wisconsin Volunteer Cavalry, during the Civil War; died at his home, October 5.

John Francis Wouters, M.D., New York City; College of Physicians and Surgeons of the City of New York, 1888; aged 65; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of New York; for several years a member of the attending orthopedic staff of the French Hospital; died at his home, September 30, from heart disease.

Benjamin Franklin Spangler, M.D., York, Pa.; Jefferson Medical College, 1868; aged 73; a member of the Medical Society of the State of Pennsylvania; one of the organizers

and for many years a director of the Drovers and Mechanics' National Bank, York; a veteran of the Civil War; died at his home, September 29, from disease of the stomach.

Harold Havelock Kynett, M.D., Philadelphia; University of Pennsylvania, Philadelphia, 1886; aged 55; formerly a member of the Medical Society of the State of Pennsylvania; a gynecologist; for several years president of the Philadelphia Choral Society; who had been crippled for many years by reason of an accident; died at his home, October 1.

Brent L. Barker, M.D., Monticello, Ill.; Louisville (Ky.) Medical College, 1897; aged 46; formerly a Fellow of the American Medical Association; a member of the Illinois State Medical Society; once secretary of the Piatt County Medical Society; local surgeon of the Illinois Central Railroad; died at his home, September 29.

Lieut. John Henry Andres, Jr., M. R. C., U. S. Army, Duluth, Minn.; University of Pennsylvania, Philadelphia, 1911; on duty with a medical detachment of field artillery at El Paso, Texas; was found dead in his room at a hotel in El Paso, October 5; death being due to an incised wound of the throat.

Carl Oscar Bernhardi, M.D., Rock Island, Ill.; Rush Medical College, 1902; aged 37; a Fellow of the American Medical Association, and a well known surgeon of Rock Island; who had been suffering from heart disease for six months; died in the Presbyterian Hospital, Chicago, October 8, from lobar pneumonia.

Harlan Page Ustick, M.D., Boise, Idaho, Hahnemann Medical College, Philadelphia, 1883; aged 68; founder of the town of Ustick, Idaho, and for several years president of the Ustick Bank; died suddenly, September 26, from heart disease at the Cinnabar Mine, near Yellow Pine, on Fern Creek, Idaho.

John W. Hawkins, M.D., Glasgow, Mo.; Jefferson Medical College, 1861; aged 79; a member of the Missouri State Medical Association, and president of the Howard County Medical Association in 1915; died at his home, August 5, from malignant disease of the rectum.

Jessie B. Pierce Garwood, M.D., Princeton, Ill.; State University of Iowa, Iowa City, 1888; aged 59; formerly a Fellow of the American Medical Association; a member of the Illinois State Medical Society; died at her home, September 12, from diabetes.

Loran W. Jordan, M.D., Wabash, Ind.; Hahnemann Medical College, Chicago, 1883; College of Physicians and Surgeons, Chicago, 1884; aged 64; formerly a member of the Indiana State Medical Association; died at his home, October 2.

Thomas McCrary Hughes, M.D., Russellville, Ala.; Chattanooga (Tenn.) Medical College, 1900; aged 41; a member of the Medical Association of the State of Alabama; was shot and killed by a companion, October 4, while on a hunting trip.

Joseph A. Hansler, M.D., St. Joseph, Mo.; Ensworth Medical College, St. Joseph, 1908; aged 40; a member of the Missouri State Medical Association; who went to San Antonio recently on account of his health; died at that city, October 4.

Fred Vandegraff Turk, M.D., Stilesboro, Ga.; Atlanta (Ga.) Medical College, 1892; aged 48; formerly a member of the Medical Association of Georgia; died at his home, September 5.

Emma Mehlmann, M.D., Oakland, Calif.; University of California, San Francisco, 1917; aged 33; died at the home of her sister, in Oakland, September 31, from leukemia.

Henry A. Litzenberger, M.D., Walnutport, Pa.; Medico-Chirurgical College of Philadelphia, 1897; aged 44; died at his home, about September 23, from heart disease.

Harry Vernon Weaver, M.D., New Bedford, Mass.; Boston University, 1893; aged 47; a Fellow of the American Medical Association; died at his home, September 21, from peritonitis.

Nicholos Soteriades, M.D., Waterloo, Ill.; University of Munich, Bavaria, 1876; aged 70; died at his home, September 10, from myocarditis.

James Heacock, M.D., Parsons, Kan.; Homeopathic Medical College of Missouri, St. Louis, 1872; died at his home, about September 24.

Charles E. Whitham, M.D., Lawrence, Kan.; Eclectic Medical Institute, Cincinnati, 1859; aged 87; died at his home, September 25.

Turner Eugene Balsley, M.D., Reidsville, N. C.; New York University, New York City, 1879; died at his home, September 1.

R. M. Hargett, M.D., Versailles, Mo.; St. Louis, Medical College, 1872; died at his home, September 23.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

ALCRESTA IPECAC

Report of the Council on Pharmacy and Chemistry

The Council has adopted the following report and authorized its publication.

W. A. PUCKNER, Secretary.

In 1915 Alcresta Ipecac Tablets (Eli Lilly and Co.) were admitted to New and Nonofficial Remedies as a preparation of ipecac that is insoluble in the stomach but soluble in the intestines. It was supposed that this property would permit the administration of ipecac without the accompanying nausea and vomiting, and that this would be of especial advantage when using the drug in amebic dysentery. The systemic effects, of course, would be those of ipecac.

More recently, the manufacturers of Alcresta Ipecac have been advising its use in conditions which were not contemplated by the Council when the preparation was accepted for New and Nonofficial Remedies. They now claim that ipecac alkaloids have been shown to be useful in the treatment of typhoid fever, flatulence, diarrhea and constipation and that Alcresta Ipecac has these properties. Such a statement is misleading. While it is true that at one time ipecac was used promiscuously against "flatulence, diarrhea and constipation" there never has been and is not now any scientific evidence of its efficiency in such conditions except, of course, in diarrhea of the amebic type. As to the alleged usefulness of ipecac in typhoid fever: This has not even the sanction of tradition and the claim certainly should not be accepted until there is strong evidence to support it.

The advertising matter on Alcresta Ipecac also contained statements to the effect that ipecac alkaloids have a demonstrated usefulness in pyorrhea. Such an unequivocal statement is unwarranted. In spite of the enthusiastic advocacy, in the past, of ipecac alkaloids as a specific in pyorrhea alveolaris the preponderance of scientific evidence indicates that ipecac is of questionable value in this condition. Neither is there any substantial evidence to warrant the claim that ipecac alkaloids, when absorbed through the intestines, are demonstrably useful in amebic infections of the tonsils.

The reputation of the best drugs, whether unofficial or official, is bound to suffer if extravagant claims for them are permitted to go unchallenged. The referee of the Council, therefore, believed it necessary to call the attention of the manufacturers of Alcresta Ipecac Tablets to the statements made for the product and suggested that they submit evidence to substantiate the claims. This the manufacturers have refused to do. Their attitude in the matter, as well as their attitude toward the Council's work is expressed in the following letter:

"Responding to your letter of March 10th, we beg to suggest that literature covering the different matters at issue are readily available to your referee, and all statements emanating from us are made advisedly.

"If you cannot satisfy yourselves that this preparation is a scientific product, ethically advertised, and a desirable advance in therapeutics, you can only delete it from your next issue of New and Nonofficial Remedies."

It is to be regretted that Eli Lilly and Co. refuse either to withdraw or modify their claims or to substantiate these claims by scientific evidence. The statements as they stand are exaggerated, misleading and harmful. As such they conflict with Rule 6 of the Council and necessitate the omission of Alcresta Ipecac from New and Nonofficial Remedies. The referee recommended the adoption and publication of this report.

HEPATICO TABLETS

Report of the Council on Pharmacy and Chemistry

The Council has adopted the following report and authorized its publication.

W. A. PUCKNER, Secretary.

"Hepatico Tablets" (David Laboratories, Inc., Brooklyn) are sold under such claims as:

"Hepatico Tablets directly stimulates the liver cells, producing an increased flow of bile rich in cholates, a solvent of cholestrin [*Sic!*] and a biliary antiseptic for Hepatic Insufficiency, Intestinal Putrefaction, Habitual Constipation and Gall Stones."

"Hepatico Tablets contain a combination of bile salts, pepsin, pancreatin, ext. nux vomica and cascara." [In a formula given in the same circular cascara is replaced by the nondescriptive term "cascarin"].

"These tablets are now being extensively used, with most excellent results, in intestinal putrefaction, or autointoxication conditions, as an intestinal antiseptic."

"The increased amount of bile, which contains an excess of cholates, flowing continuously through the intestines, prevents abnormal fermentative and putrefactive processes in the bowels."

Comparing the alleged composition of, and therapeutic claims for, "Hepatico Tablets" with those made for "Veracolate" (THE JOURNAL, April 24, 1915, p. 1440) many points of similarity are seen. Veracolate was claimed to contain sodium glycocholate and sodium taurocholate with cascara sagrada and phenolphthalein and the mixture was also offered in combination with pepsin and pancreatin. Hepatico Tablets are said to contain sodium glycocholate and sodium taurocholate, cascara sagrada, pepsin and pancreatin.

Both are said to stimulate bile activity and to be disinfectants of the intestinal tract. The general similarity of the claims made for these two preparations may be seen by a comparison of two sentences taken from the advertising matter:

"The action of Veracolate is to bring about a profuse flow of healthy bile which prevents bile stasis. As the flow of bile is stimulated so antiseptic action ensues, calculi softened and the concretion and mucous eliminated."	"Hepatico Tablets bring about the secretion of healthy bile, which prevents bile-stasis as the flow of bile is stimulated, so antiseptic action ensues, calculi softened, and concretions and mucous eliminated."

A comparison with the claim made for Taurocol (THE JOURNAL, April 24, 1915, p. 1441) shows a similar resemblance:

TAUROCOL CIRCULAR	HEPATICO CIRCULAR
". . . Directly stimulates the liver cells, producing an abundant flow of bile rich in cholates, solvent of cholesterin and a biliary antiseptic."	"Hepatico Tablets directly stimulates the liver cells, producing an increased flow of bile rich in cholates, a solvent of cholesterin and a biliary antiseptic . . ."

It thus appears that not only is the composition of Hepatico Tablets essentially similar to Veracolate and Taurocol, but its promoters adopt virtually the same therapeutic nonsense used to exploit these competing preparations. There is no evidence that any of the constituents of Hepatico Tablets, or the combination as a whole has any such therapeutic merit as would warrant the claims made.

The Council declared Hepatico Tablets in conflict with Rules 6, 8 and 10 (unwarranted therapeutic claims, objectionable name and irrational combination of substances).

SOME MISBRANDED NOSTRUMS*

Sherman's Compound Prickly Ash Bitters.—The Prickly Ash Bitters Co. of St. Louis, Mo., were the sole proprietors of "Dr. B. F. Sherman's Compound Prickly Ash Bitters," which the government declared misbranded. The product, which contained 20 per cent. alcohol, was recommended in wineglassful doses three times a day or less but was declared to be "not an intoxicating beverage!" The government chemists reported that in addition to the alcohol, buchu was indicated and emodin present, but alkaloids were absent. It was sold as an effective remedy for Bright's disease, dropsy, diabetes, inflammation of the bladder, gallstones, leukorrhea, irregular periods, incontinence, retention and suppression of urine, for malignant diseases of the kidney and for various other conditions equally serious. The claims were declared recklessly and wantonly false and fraudulent. The company pleaded guilty and was fined $10 and costs.—[*Notice of Judgment No. 4455.*]

"Thorn's Copaiba and Sarsaparilla" and "Tarrant's Cubebs and Copaiba."—The Tarrant Co., New York City, shipped in interstate commerce quantities of "Thorn's Compound Extract of Copaiba and Sarsparilla" and "Tarrant's Compound Extract of Cubebs and Copaiba" both of which were declared misbranded under the Food and Drugs Act. Federal chemists reported that the former was essentially a mixture of copaiba and sarsaparilla extract. It was sold as a certain remedy for gonorrhea and gleet and as a remedy for pyelitis, whites, incipient stricture, affections of the kidneys and gravel. These claims were declared false and fraudulent. "Tarrant's Compound Extract" according to the federal chemists consisted essentially of a mixture of copaiba and cubeb extract. It was sold under claims very similar to those made for the first-named preparation, claims which also were declared false and fraudulent. The company pleaded guilty and was fined $25.—[*Notice of Judgment No. 4473.*]

V. I. G.—The Van Vleet-Mansfield Drug Co. of Memphis, Tenn., marketed "V. I. G.," which contained morphin. The government chemists analyzed it and reported that it was "an aqueous solution of glycerin, morphin, berberin, hydrastin and salicylic acid." It was sold under the claim that it was a "cure" for gonorrhea, gleet and leukorrhea and would prevent contagion when used immediately after connection. These claims were naturally declared recklessly and wantonly false and fraudulent. The company pleaded guilty and was fined $25 and costs.—[*Notice of Judgment No. 4423.*]

* This material, with much additional, appears in the new edition of the pamphlet "Convictions," price fifteen cents.

Correspondence

"THE OBJECTIONS TO RAW EGGS IN THE DIET"

To the Editor:—Your editorial of Sept. 22, 1917, p. 1005, on this subject, calling favorable attention to Bateman's article on the raw egg in the *American Journal of the Medical Sciences*, June, 1917, needs a preliminary reply. Were it not for the stamp of authority of the Sheffield Physiological Laboratory and the consequent serious results that its publication has already caused and likely will further cause, Bateman's flimsy, illogical, unscientific array of semifacts would not be entitled to notice. His conclusion is based on the narrow view that because of the loss of 15 per cent. of available albumin (which is not lost in feeding boiled egg white) the physician should discard the use of the raw egg as "illogical and inadvisable," and that "no advantage accrues." He cites out of but twelve persons observed (?) only one, a child 3 years old, who had diarrhea during the three days that one-half raw white of egg was given daily. Its effect on dogs of vomiting and purging were not reproduced on human subjects by Bateman. Bateman has ignored our later physiologic concept that the uncooked egg must have, besides its caloric value, also a value due specifically to its organized structures for bone, nerve, tissue and blood making, for its pulmonary, digestive, excretory and reproductive systems, for its ductless and other glandular structures, its enzymes, proenzymes, activating and inter-activating, constructive and defensive mechanism, and for many potential qualities that are destroyed in cooked eggs. Bateman, without discussing these inherent qualities, would have us throw them away for the sake of saving a probable loss of 15 per cent. Even if the loss were 90 per cent., the raw egg would still in critical cases be worth many times the mere nutritional loss. Also other proteins can be added, and in many ways we can (Bateman admits as much) prevent the loss; but we have nothing in nutrition that can supply the perfect pabulum of the raw egg for the sick who may be

especially deficient in these vital selective elements. Lest repeated favorable comment on Bateman's views by medical journals, by public health writers and by the lay press in their desire to publish the latest apparently authentic knowledge might lay the foundation for irreparable harm, I give this early warning until a more complete refutation of Bateman's position which I hope soon will be ready for publication. NATHAN ROSEWATER, M.D., Cleveland.

[COMMENT.—Our correspondent has not offered a refutation of the scientific observations on which Bateman's conclusions are based. He has not denied that egg white is digested less readily in the raw form than when it is heated to the "coddling" stage at 70 C. (158 F.); nor has he denied that the use of a large number of raw eggs may be attended with putrefactive changes in the bowel. So far as its gross nutritive properties are concerned, the egg can still supply them after it has been cooked. When our correspondent defends the *liberal* use of raw eggs—if that is what he intends to do—by reference to "vital selective elements" and a great diversity of "potential equalities" of undemonstrated potency, he appears to us to enter the domain of vague hypothesis which we are less able to follow than the alleged "flimsy semifacts" referred to in our editorial. What evidence there is for the existence, in the egg, of "organized structures for bone," etc., for "activating and interactivating constructive mechanisms," etc., we are unable to learn. It is true that enzymes are destroyed by heat; but the day for calling on the enzymes of raw food to sustain subtle virtues in them is passing. It is doubtless true that thousands of raw eggs have been fed without obvious untoward effects to patients; likewise dozens of quarts of raw chestnuts have been eaten without serious consequences. These observed facts by themselves do not constitute a brief for either of the raw foods mentioned.

That well known writers at the present time are by no means agreed with the attitude of our correspondent is further shown by the following quotation from the recent little manual "The Physiology of Food and Economy in Diet" by Dr. W. M. Bayliss, professor of general physiology in University College, London, a physiologist of international repute, who writes: "There are one or two erroneous impressions as to the value of some particular foods that need correction. The first of these is that raw eggs are more easily digested than cooked ones. The contrary has been shown by careful experiments to be the case. Of course, if the white is boiled hard, it must be finely divided by chewing, otherwise the gastric juice can only attack it slowly from the outside. Probably the best form is that of custard. The reason why raw egg-white is difficult of digestion is that it contains something, in small amount, which has a powerful retarding or inhibiting action on the digestive enzymes. This is destroyed by heat."—ED.]

"LARREY, THE ORIGINATOR OF THE RAPID EVACUATION OF THE WOUNDED"

To the Editor:—Anent the interesting historical account of Larrey, the famous surgeon and patriot, by Dr. King of New Orleans, published in THE JOURNAL, September 29, and your editorial eulogizing the same surgeon, I would like to quote the following from "La Campagne de Russie, Mémoires du Général Comte de Ségur, Aide-de-Camp de Napoléon," an eye witness and participant in the ill-fated invasion of and retreat from Russia. "In the furious engagement at Borodine, 20,000 wounded were picked up and carried about two leagues to the rear to the great abbey of Kolotshoc." Then the historian continues:

"Le chirurgien en chef Larrey venait de prendre des aides dans tous les régiments. Les ambulances avaient rejoint; mais tout fut insuffisant. Il s'est plaint depuis, dans une relation imprimée, qu'aucune troupe ne liu eut été laissée pour requérir les choses de première nécessité dans les villages environnants."

"The chief surgeon, Larrey, had just gone for assistants from the regiments. The ambulances had rejoined, but were entirely insufficient. It has since been complained, in a printed account, that no soldiers had been left him for securing necessary things from the surrounding villages."

Larrey was probably the busiest surgeon that history has ever witnessed.

H. P. ASHE, M.D., Pittsburgh.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

"TREATMENT OF ANTHRAX WITH NORMAL SERUM"

To the Editor:—Since the publication of the abstracts of R. Kraus' article on the treatment of human anthrax with normal inactivated beef serum intravenously, I have been looking for rapid corroboration of this apparently important work. In THE JOURNAL, Sept. 15, 1917, p. 949, appears the abstract of an article by Lignières which is anything but corroborative of the beef serum treatment. Your editorial comment ("The Treatment of Anthrax with Normal Serum," THE JOURNAL, Sept. 29, 1917, p. 1085) ignores this objection and speaks of the treatment as resting on indisputable evidence.

Will you please state if Lignières has retreated from his position, and if Kraus' statements have been corroborated by other workers?

J. SEILIN, M.D., Chicago.

ANSWER.—We wish first to call the attention of our correspondent particularly to the fact that the beef serum used by Kraus was heated before injection, as stated in our editorial. Kraus' observations are based on definite experimental evidence, and his conclusions as to the clinical value of the treatment, in view of his high reputation as an investigator, seem worthy of all consideration. With regard to Lignières' criticisms, these seem to be founded largely on analogy and not on direct observational or experimental contradiction of Kraus' work. It is, of course, true that confirmation from other sources of the success obtained by Kraus in treatment of human anthrax with heated normal beef serum should be obtained before the method is generally advocated and introduced. We are not aware of any evidence that directly controverts or confirms Kraus' investigations.

INCOMPATIBILITY OF QUININ WITH ASPIRIN—SODIUM BICARBONATE AND ACETANILID

To the Editor:—1. Will you please tell me why capsules containing quinin and aspirin become soft? Do they develop a toxic composition? 2. What is the value of sodium bicarbonate in the compound acetanilid powder?

C. W. HEAD, M.D., Windsor, Mo.

ANSWER.—1. The conversion of quinin to the toxic substance quinotoxin by acids, with particular reference to acetylsalicylic acid (aspirin), was discussed in THE JOURNAL, Dec. 18, 1915, p. 2187.

2. Worth Hale has reported experiments which indicate that sodium bicarbonate lessens the toxicity of acetanilid both on the heart and on the intact animal (THE JOURNAL, Oct. 23, 1909, p. 1403). In view of his work he suggested that, to lessen its toxicity, 3 grains of sodium bicarbonate to 2 grains of acetanilid may be tried (THE JOURNAL, Sept. 2, 1911, p. 840).

BOOKS ON HEALTH OF WAR WORKERS

To the Editor:—Please inform me where I can obtain the following: Goldmark, "Fatigue and Efficiency"; Lee, "Fatigue"; Harvey Lectures, 1906-1907; Vernon, "Output in Relation to Hours of Work," British Health of Munitions Workers Committee. They are references mentioned in THE JOURNAL, Oct. 6, 1916, p. 1125.

CARL J. GADE, M.D., Bridgeport, Conn.

ANSWER.—These may be obtained from the publishers or through any bookseller.

Goldmark, Josephine: Fatigue and Efficiency, published by Russell Sage Foundation, 1 Madison Avenue, New York, $2.

Lee, F. S.: Fatigue, Harvey Lectures, 1906-1907, p. 172, J. B. Lippincott Company, Philadelphia, $2.50.

Vernon, H. M.: Output in Relation to Hours of Work, Memorandum 12, British Health of Munitions Workers Committee, 1916, Wyman & Sons, 29 Breams Building, Fetter Lane, E. C., London, 1½ d.

RANCH ACCOMMODATIONS FOR NERVOUS GIRL

To the Editor:—I wish to learn of a ranch in the Southwest where accommodation for a nervous girl, aged 11, and her mother could be found for the winter. The place should be one in which there would be an opportunity to live out of doors and ride.

M.D., New York.

ANSWER.—We submit this communication to our readers. Replies should be sent to THE JOURNAL office where they will be forwarded to the physician who asks the question. Those answering should give the price that would be charged for the service asked.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Little Rock, Nov. 13-14. Sec., Dr. T. J. Stout, Brinkley.
ARKANSAS: Eclectic: Little Rock, Nov. 13. Sec., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith.
CONNECTICUT: New Haven, Nov. 13-14. Sec., Dr. Charles A. Tuttle, 196 York St., New Haven.
CONNECTICUT: Homeopathic: New Haven, Nov. 13. Sec., Dr. E. C. M. Hall, 82 Grand Ave., New Haven.
CONNECTICUT: Eclectic: New Haven, Nov. 13. Pres., Dr. J. W. Fyfe, Saugatuck.
FLORIDA: Jacksonville, Dec. 4-5. Sec., Dr. W. M. Rowlett, Citizens Bank Bldg., Tampa.
MAINE: Portland, Nov. 13-14. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.
NEVADA: Carson City, Nov. 5. Sec., Dr. S. L. Lee, Carson City.
OHIO: Columbus, Dec. 4-6. Sec. Pro-tem., Dr. Herbert M. Platter, 185 E. State St., Columbus.
SOUTH CAROLINA: Columbia, Nov. 13. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
TEXAS: Dallas, Nov. 20-22. Sec., Dr. M. F. Bettencourt, Mart.
WEST VIRGINIA: Clarksburg, Nov. 21-23. Chairman, Dr. S. L. Jenson, Capitol Bldg., Charleston.

Hawaii May Examination

Dr. R. W. Benz, chairman of the Board of Medical Examiners of Hawaii, reports that 3 candidates were licensed at the examination held at Honolulu, May 7-10, 1917. The following colleges were represented:

College	PASSED Year Grad.	Total No. Licensed
University of California	(1916)	1
Sendai Special Medical School, Japan	(1908)	1
Osaka Prefectural College of Medicine, Japan	(1905)	1

Iowa June Examination

Dr. Guilford H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Iowa City, June 7-9, 1917. The examination covered 8 subjects and included 100 question. An average of 75 per cent. with not less than 60 per cent. in certain subjects, was required to pass. Twenty-nine candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1917)	90
Northwestern University	(1916) 82,	95
Rush Medical College	(1915)	97
University of Illinois	(1916)	92
State University of Iowa College of Homeo. Medicine	(1917)	93
State University of Iowa College of Medicine	(1917) 86, 89, 90, 91, 91, 91, 91, 91, 92, 92, 92, 93, 93, 94, 94, 94, 95, 96.	
St. Louis University	(1917)	82
Eclectic Medical College	(1917)	92.5
University of Pennsylvania	(1917)	94
Lincoln Memorial University	(1915)	76

Minnesota June Examination

Dr. Thomas McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the oral, practical and written examination held at Minneapolis, June 5-7, 1917. The examination covered 18 subjects and included 80 questions. An average of 75 per cent. was required to pass. Thirty-five candidates were examined, all of whom passed. Five candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED Year Grad.	Per Cent.
Rush Medical College (1917) 90, 91, 92, 92.		
University of Illinois	(1917)	85
Harvard University	(1914)	96
University of Minnesota (1917) 86, 91; (1918*) 80, 82, 83, 84, 84, 85, 85, 85, 86, 86, 87, 87, 87, 87, 87, 88, 88, 88, 89, 89, 89, 89, 90, 91, 92, 93.		
Columbia University	(1915)	87

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Northwestern University	(1916)	Illinois
John A. Creighton Medical College	(1916)	Nebraska
Jefferson Medical College of Philadelphia	(1913)	Wisconsin
Medical College of Virginia	(1911)	Virginia

* A year's internship in an approved hospital is required for graduation from the University of Minnesota Medical School, but only completion of a four-year medical course is required for licensure in Minnesota.

Book Notices

THE MODERN MILK PROBLEM IN SANITATION, ECONOMICS AND AGRICULTURE. By J. Scott McNutt, Lecturer on Public Health Service in the Massachusetts Institute of Technology. Cloth. Price, $2. Pp. 258, with illustrations. New York: The Macmillan Company, 1917.

A large number of interesting facts on the milk supply problem are brought together in this book. The discussion of the economic and administrative side of the question is particularly complete, and the author seems to appreciate the complexity of the whole question. He states emphatically (page 158) that sanitary milk need not cost much more than insanitary milk, but he also recognizes that in justice to the milk producer some increase in price is necessary on purely economic grounds. He calls attention, however, to the difference in local conditions and to the desirability of cooperation on the part of the different interests concerned in milk production and distribution. We note that the retail price of milk in Boston, which is in a section of the country where milk production is not especially cheap, is 11 cents a quart. At the present writing, in Chicago the consumer is requested to pay 13 cents a quart. The layman might suppose that conditions for cheap milk production are more favorable in Boston than in Chicago. It cannot be said that Mr. McNutt has proposed any general solution for the milk problem, but he has gathered together a number of pertinent facts and has called attention to data and lines of argument often ignored in discussions of the question.

DIAGNOSIS FROM OCULAR SYMPTOMS. By Matthias Lanckton Foster, M.D., F.A.C.S., Ophthalmic Surgeon to the New Rochelle Hospital. Cloth. Price, $6. Pp. 490. New York: Rebman Company, 1917.

This book is written from an entirely new point of view. The subject matter is arranged in the usual way—cornea, iris, optic nerve, etc.—and the various diseases and conditions are treated seriatim; but only their symptoms, objective and subjective, and "as such," are considered. There is nothing on history, course, morbid anatomy, pathogenesis, complications, sequelae, prognosis or treatment, and therefore no real differential diagnosis, which must concern all these things. It is obviously no book for the beginner; it will mislead the general practitioner, and it is not encyclopedic enough on symptoms to be a final reference book. Yet the author frankly meets these criticisms in his preface. He does not pretend to write a textbook. He just treats of symptoms, and has thereby done us a definite service; for we cannot get away from symptoms: they are and should be with us morning, noon and night. We have our works on pathology alone, on treatment alone, medical and surgical; why not on symptoms alone? The author's style is easy and fluent, and one reads on and on with interest and profit, surprised and often a little disconcerted that so true a picture of things is called up by symptoms alone.

SLOVAK (SLAVISH) SELF-TAUGHT. By S. Morávek. Cloth. Price, $1. Pp. 126. Monessen, Pa.: The Author, 1917.

Slovak is the language spoken by the people of northern Hungary and Moravia. It is closely allied to all the Slavic languages, so that a smattering of Slovak helps the physician in dealing with Slavs in general. With a little further study he can deal with Polish, Croatian, Bohemian, Serbian and Russian patients. It is an advantage that the Slavic languages resemble each other more as spoken than as written. "Slovak Self-Taught" is not a pocket manual, but has a stout cover about 9 by 6 inches. It contains thirty-six pages of classified phrases in common use, with the pronunciation, a vocabulary of thirty pages, and fifty-four pages of grammar. The print is unusually large and clear. A page and a half are devoted to "With the Doctor." This section is fairly complete, but it does not contain the terms of command: "Sleep" and "Wake up," which may be needed in case hypnotic suggestion is being used. The author has supplied these additionally, on request, as follows:

Sleep	Spi	(spi)
Wake up	Prebud sa	(prebudY sa)

Applicable in War Time.—The great business of life is to be, to do, to do without and to depart.—John Morley.

Medicolegal

Valid Provisions for Dealing with Tuberculosis

(Sacramento County vs. Chambers (Calif.), 164 Pac. R. 613)

The District Court of Appeal of California, Third District holds valid the act of 1915 which provides for the establishment and maintenance of a bureau of tuberculosis under the direction of the state board of health, defining its powers and duties, and provides for the granting of state aid to cities, counties, cities and counties, and groups of counties for the support and care of persons afflicted with tuberculosis. The court says that the fundamental proposition on which the argument against the constitutional propriety of the provision of the act authorizing the payment of certain sums to the counties was that the state has made it the duty of counties to maintain hospitals for the care, support and treatment of the indigent sick, and therefore the burden of supporting such hospitals is on the counties, and not on the state. There is no doubt the legislature intended to and did transfer from its own shoulders, and so placed on the counties, the duty and burden of caring for, supporting and treating the classes of persons mentioned. But this does not mean that the state has thus forever surrendered all control over those matters or the right itself to exercise full and complete and exclusive jurisdiction and control over hospitals for the indigent sick and helpless paupers. The constitution does not require this burden to be borne by the counties. The state may so transfer it to counties, however, in the exercise of its sovereignty. On the other hand, the state may take back and itself resume the exercise of certain functions which it has delegated to those local agencies; and, in some cases, particularly those having reference to the state's police power, the court knows of no reason, constitutional or otherwise, why the state and the counties may not act conjointly and synchronously in carrying out the policies of the former.

By health statistics and data gathered and published by the public health department of the state government, it has been shown that over one seventh of all the deaths in California, prior to the passage and enforcement of the law here under attack, were caused by this dread and justly dreaded disease, tuberculosis, and that, down to the time mentioned, the ratio of deaths from it was constantly increasing. Since then there has been a marked decrease in deaths from this cause. Still there are in the state large numbers of persons suffering from this deadly disease, mostly in the form of attacks on the pulmonary organs, very many of which persons are without financial means to pay for their own support and medical treatment, and without relatives legally liable or financially able to give them support and the care and treatment indispensable in such cases. The existence of such conditions is obviously a positive menace to the health of the inhabitants of the state.

The state undoubtedly has the right, under its police power, to adopt sanitary or other appropriate regulations, applicable to the whole state and to private as well as to public tuberculosis sanatoriums, looking to the stamping out of the disease and the prevention of its increase, and thus to the protection of the public health. With respect to county tuberculosis wards or hospitals, it proposes by the law in question to do no more than this. In authorizing the payment by the state of the sum named in the act to counties maintaining such wards or hospitals according to regulations formulated and promulgated by its health department, the legislature did not intend, nor was it the object of the act, to appropriate the state's money to or for the benefit of counties, but only to facilitate the proper execution of its scheme to control in part or itself supervise the matter of the treatment of indigent tuberculous patients, legally entitled to be taken care of at public expense. Obviously, the counties to which these moneys are authorized to be paid are, as to such money, mere trustees of an express trust, with absolutely no authority or right to divert the use of it to any other than the purpose or object for which it has been expressly appropriated by the state.

Society Proceedings

COMING MEETINGS

Amer. Acad. of Ophthal. and Oto-Laryng., Pittsburgh, Oct. 29-30.
Amer. Public Health Association, Washington, D. C., Dec. 4-7.
Clinical Congress of Surgeons, Chicago, Oct. 22-26.
Kentucky State Medical Association, Louisville, Nov. 6-9.
Southern Medical Association, Memphis, November 12-15.
Virginia State Medical Society, Roanoke, Oct. 23-26.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

Thirtieth Annual Meeting, held at Newark, N. J., Sept. 17-19, 1917

(Continued from page 1294)

Acute Dilatation of the Uterus

DR. N. STONE SCOTT, Cleveland: A review of the literature gives the impression that acute dilatation of the uterus is of infrequent occurrence. A study of six cases has brought me to the conclusion that acute dilatation is not rare and has furnished an explanation of this apparent scarcity. Acute dilatation during the early months of pregnancy presents a marked difference from acute dilatation at term, in that it has no appreciable influence on the bleeding. The more or less complete hemostasis occurring after the complete separation of the placenta after an ordinary miscarriage depends on the hemostatic properties of the blood and the blood vessels, and this is not materially modified by an acute dilatation. A uterus at full term, which has been emptied of its contents, will cause an alarming hemorrhage if it does not contract and control the bleeding by muscular action. This is due to the changes which have taken place in the blood vessels during the pregnancy. Should a contracted uterus lose its muscular tone and again dilate, the same alarming hemorrhage will supervene. Some authors believe that acute dilatation is a phenomenon of sepsis. Maier thinks acute dilatation will occur only when there has been a prior disease of the muscle wall. My cases support the theory that the disease must be in the uterine cornua, where interference with the uterine innervation will be most marked. Three of my patients had a placental implantation in one or the other horn, and the fourth had a small fibroid in the same place. Great dilatation occurred only in those who had been recently pregnant.

DISCUSSION

DR. HUGO O. PANTZER, Indianapolis: A case occurred in my practice within the last seven weeks. The woman, aged 38, was operated on for appendicitis. She had had continuous bleeding for six weeks. She had been married many years, but was never before pregnant. The breast changes were indifferent; a diagnosis of pregnancy was doubtful. A fibroid tumor as a possibility was entertained. On dilating the uterus I found the phenomenon described by the essayist. For a moment I was in doubt as to whether or not I had perforated the uterus. I opened the abdomen from above and found the uterus relatively small and not perforated. I removed the fetus through an opening made in the uterus.

DR. EDWARD J. ILL, Newark, N. J.: I have heard of these cases, but I have never seen one. What I have seen, when we thought we had such a case, was that the curet or sound was passed through the posterior wall of the uterus into the peritoneal cavity below the os internum. I think that in Dr. Pantzer's case there was a perforation of the uterus low down behind or at either side. I have seen a crochet needle go into the cellular tissue behind the uterus.

DR. WILLIAM H. HUMISTON, Cleveland: A woman who had had several attacks of appendicitis aborted. I introduced a dull curet, and it went on in without any effort. I had perforated the uterus. I removed the placental tissue and opened the abdomen. There was a puncture in the posterior uterine wall. I removed the appendix, sewed up the hole in the uterus, cleaned out a few clots in the pelvis, and the woman recovered.

DR. JAMES E. DAVIS, Detroit: When a muscle is stimulated with the electric current, the muscle bellies out. If we con-

tinue the application of the electric current until extreme irritation is reached, the muscle will lengthen. According to Young, the epithelium of the chorionic villi, during the first three or four months of pregnancy, throws out an enzyme which has the effect of producing, first, edema, and later on marked dilatation of the blood vessels. This edema may be so marked as to extend throughout the entire body, a condition which has been regarded as an error in the kidney condition.

DR. J. HENRY CARSTENS, Detroit: As the result of profound anesthesia there is relaxation of the uterine muscles, a dilatation. The muscles become flabby, and when a sound is introduced into the uterus, provided the muscles have not undergone fatty degeneration, the uterus is shoved away up and it seems ballooned when it is not. The uterus is of normal size, but its walls are thin.

DR. VAN AMBER BROWN, Detroit: Was there in any of your cases a marked anemia that antedated the pregnancy?

DR. N. STONE SCOTT, Cleveland: I would not say that none of them had anemia, but some of them did not have sufficient bleeding to produce anemia. Some of the patients were healthy young women who were not anemic.

Mixed Cell Tumor of the Kidney

DR. WILLIAM E. DARNALL, Atlantic City, N. J.: These tumors are considered malignant, but may be benign. Whether they are to be classed with carcinomas or sarcomas seems to be a question pathologists have never definitely decided. Metastases occur late. The suprarenal tumor may arise from suprarenal rests in ectopic portions of kidney, ovary, testicle, liver, mesentery, lungs or bones. These tumors are always made up of mixed cells. The term "hypernephroma" has been applied to them, but hypernephroma may mean almost anything that is a kidney tumor. The immediate mortality from operation is high. Recurrences are said to take place in from 70 to 80 per cent. of the cases. Early diagnosis and operation are the only hope of saving more of these patients. A large percentage of them develop metastases and die. Some, however, have remained well after the removal of the tumor. More favorable results might be obtained if the patients could be discovered and operated on earlier.

DISCUSSION

DR. E. GUSTAV ZINKE, Cincinnati: I am reminded of a theory of the occurrence of cancer that has been more or less abandoned: that all cancers are really of embryonal origin. Some of these embryonal cells become shut off from the rest; they go to sleep, as it were; they remain inactive and inert for years, and sometimes, as the result of an accident, a fall or a blow, or in consequence of some irritation, they are reawakened, they become active, and the result is a malignant growth.

DR. GORDON K. DICKINSON, Jersey City, N. J.: Dr. Carstens brought out at the meeting of this association a year or two ago the fact that there may be many severe continued irritations without producing carcinoma. The theory of Cohnheim that cancer is of embryonal origin appeals very strongly to me.

The Left Fallopian Tube and Intestinal Stasis

DR. DOUGLAS H. STEWART, New York: A concealed gonococcus infection may set up a salpingitis and an ileus. In two patients whose fallopian tubes showed no change, except such as might be expected to occur from an excess of nutrition, a portion of such tubes adhered to the anterior wall of the rectum, formed a band there, obstructed the fecal flow, and at the same time derived a new and an additional source of blood supply. Such an obstruction may be differentiated from a Houston's valve because it is rigid and unyielding and because it is so plainly not within the lumen, but on the outside of the rectal wall. As a result of fatigue and muscular exhaustion due to the constant if partial resistance of the obstacle, the bowel balloons both above and below the band. The condition is not a rare one. Any surgeon coming across it during his exploration of an abdomen would simply term it a band, would cut it and relieve all the symptoms without troubling himself to determine the nature and origin of that band. Both my patients were well past the menopause, yet the new blood supply prevented atrophy of that portion of the tube that had become adherent. Removal of the hypertrophied section relieved all adverse symptoms by freeing the intestine and allowing it to resume its functions unhampered.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Public Health, Boston

September, VII, No. 9

1 Illegal Practitioners, Fakers and Charlatans. G. A. Jordan, St. Louis.—p. 725.
2 Council of National Defense. F. Martin, Washington, D. C.—p. 733.
3 Menace of Dusty Trades. W. G. Thompson, New York.—p. 737.
4 Uses of Morbidity Reports by Minnesota State Department of Health. A. J. Chesley, Minneapolis.—p. 744.
5 Recent Developments in Design of Municipal Waste Disposal Plants. G. R. Tuska, New York.—p. 754.
6 Diagnostic Laboratories in Public Health Work. W. D. Stovall, Madison, Wis.—p. 759.
7 Check for Registration of Births. W. H. Davis, Washington, D. C.—p. 762.
8 Visceral Changes in Wood Alcohol Poisoning by Inhalation. A. A. Eisenberg, Cleveland.—p. 765.
9 Relation of Public Health Service to Problems of Industrial Hygiene. J. W. Kerr.—p. 776.
10 Eye Conditions Shown in Medical Inspection of Schools. W. H. Peters and R. B. Irwin.—p. 782.
11 Some Differential Reactions of Coli-Like Bacteria. M. Levine, Ames, Iowa.—p. 784.
12 Fallacies in Investigation of Water Supplies. H. A. Whittaker.—p. 785.
13 Necessity of Graphic Illustration of Sanitary Conditions in Community. M. R. Mobley, Florence, S. C.—p. 787.

Boston Medical and Surgical Journal

September 27, CLXXVII, No. 13

14 Foreign Bodies in Eye. J. F. Curran, Worcester.—p. 435
15 Chinese Barber and His Use of Aural Instruments. A. M. Dunlap, Shanghai, China.—p. 438.
16 Results of Further Study in Leg Rotation. C. L. Lowman, Los Angeles.—p. 440.
17 Case of Carcinoma of Umbilicus. Secondary to Intestine Cancer. M. G. Wohl, Omaha.—p. 442.
18 *Radium Treatment of Bladder and Prostatic Carcinoma. B. S. Barringer, New York.—p. 444.

18. Radium Treatment of Carcinoma of Bladder and Prostate.—Two of twenty-five cases of carcinoma of the bladder treated by Barringer would, he says, have been considered good operative risks; the other twenty-three cases, because of the extent of the tumors, were all impossible operative risks. In four of the twenty-five cases (three confirmed microscopically as carcinoma) radium has locally removed the growth. One of these has been cystoscopically cured for ten and one-half months, one for five months, and one recently. One has what is probably a slight local recurrence, although pathologic examination of a piece removed does not confirm this view. From results in these four cases it appears that radium can do as much as surgery for cases of bladder carcinoma without subjecting the patient to the danger and discomfort of a major operation. From thirty cases of carcinoma of the prostate treated by radium since October, 1915, the following conclusions are drawn: Radium treatment has caused with surprising regularity the reduction or disappearance of carcinomatous nodules of the prostate, in both early and advanced cases. The reduction which occurs in carcinomatous lobes is, so far as has been observed, permanent. The symptoms in those cases in which the carcinoma had been reduced show striking improvement. The primary effect of the radium may be to increase the amount of residual urine (if there be any). The ultimate effect of the radium application on residual urine is probably negative, the amount neither increasing nor decreasing. No sloughs have resulted from the radium needles. Radium apparently has a selective action on carcinoma. In one case in which the prostate was removed because of urinary retention, a moderate dose of radium was given five months before the prostatectomy. The prostate had been considerably reduced

in size following the radium treatment. At operation the prostate shelled out like a nonmalignant adenoma. Very large carcinomas with cachexia and loss of weight are beyond radium or any other treatment.

Georgia Medical Association Journal, Augusta

September, VII, No. 5

19 Subparietal Injuries of Intestines and Kidney; Report of Cases. C. W. Roberts, Atlanta.—p. 81.
20 Acidosis. W. L. Funkhouser, Rome.—p. 86.
21 Gastric and Duodenal Ulcer. G. P. Huguley and G. C. Mizell, Atlanta.—p. 88.
22 *Modification of Noguchi's Complement Fixation Test for Syphilis. L. Howard, Savannah.—p. 95.
23 Preparation of Substances for Intraspinal Injection in Syphilis of Central Nervous System. A. H. Bunce, Atlanta.—p. 97.
24 Intraspinal Therapy in Syphilitic Disease of Nervous System. L. M. Gaines, Atlanta.—p. 100.

22. **Modification of Noguchi Test for Syphilis.**—In using the Noguchi system Howard has found it of great advantage to sensitize the corpuscles with amboceptor before adding them to tubes containing patient's serum, complement and antigen. He snips strips of amboceptor paper into short lengths, enough to give a certain excess of amboceptor for the tubes needed. If, for example, ten tubes requiring two units each of amboceptor are desired, paper estimated to contain twenty-four units is used. These small bits of paper are placed in a centrifuge tube with 5 or 6 c.c. of normal saline solution and agitated every few minutes for thirty minutes to dissolve out all the amboceptor. The tube is then centrifuged for a short time to clear the solution of particles of paper, and the amboceptor solution is poured off into another tube. To this is added the corpuscles to be used in the tests at hand. If ten tubes, as for above example, 1 c.c. of a 10 per cent. suspension of washed human corpuscles is added and mixed thoroughly with a pipet. The mixture of amboceptor and corpuscles is next incubated for one hour. At the same time the rack of tubes containing the other components of the test is placed in the incubator for the same length of time, to allow fixation of complement if syphilitic antibody be present. At the end of the hour, or in less time, it is noted that the corpuscles in the amboceptor corpuscle mixture have dropped to the bottom of the tube and a few revolutions of the centrifuge packs them so tightly that the tube can be inverted in pouring off the saline without loss of a corpuscle. These sensitized corpuscles do not behave like normal ones, but are heavier and will begin to settle in a few seconds after being uniformly emulsified in saline. After pouring off saline which contains excess of amboceptor, sufficient saline is added to make exactly as many cubic centimeters of corpuscle suspension as there are tubes. The corpuscles are now thoroughly emulsified with a pipet and 1 c.c. added to each tube. Hemolysis is noted almost immediately in negative tubes and those containing no antigen. The most obvious advantage in the above procedure is exact control of amboceptor. By using an excess every corpuscle is certain to be completely sensitized while the excess is discarded.

Interstate Medical Journal, St. Louis

September, XXIV, No. 9

25 Social Misfit—Study of Miss X. F. C. Studley, Milwaukee, Wis.—p. 819.
26 Study of Chemical Blood Findings in Various Surgical Conditions, with Special Reference to Prognosis and Comparison with Phenolsulphonephthalein Output. H. J. Scherck and R. B. H. Gradwohl, St. Louis.—p. 831.
27 Group Diagnosis for Clinic Patient. R. Pollock, San Diego, Calif.—p. 840.
28 Management of Pregnancy Complicated by Severe Cardiac Lesions. G. Gellhorn, St. Louis.—p. 842.
29 Case of Pregnancy Complicated by Uncompensated Heart Disease. H. Meyers, Sedalia.—p. 848.
30 Interstitial Tuberculosis of Lungs. M. E. Lapham, Highlands, N. C.—p. 851.
31 Use of Tartar Emetic in Treatment of Malaria—Preliminary Report. M. D. Levy and D. P. Wall, Galveston, Texas.—p. 858.
32 Headaches Due to Ear, Nose and Throat Conditions. W. T. Patton, New Orleans.—p. 861.
33 Aviation and Otology. L. K. Guggenheim, St. Louis.—p. 865.
34 Contagiousness vs. Communicability. D. M. Lewis, New Haven, Conn.—p. 868.
35 Easy and Satisfactory Method of Making and Indexing Surgical Case Records. G. P. LaRoque, Richmond, Va.—p. 875.
36 Hospital for Contagious Diseases in Residential Quarter. C. F. Lynch, Lansing, Mich.—p. 880.
37 Rationale of Pollen Extract Therapeusis of Hay Fever; Report of One Hundred and Twenty-seven Cases. N. S. Ferry, Detroit.—p. 884.

Journal of Experimental Medicine, Baltimore

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38 *Neutralization of Antipneumococcus Immune Bodies by Infected Exudates and Serums. R. Cole, New York.—p. 453.
39 *Elaboration of Specific Soluble Substance by Pneumococcus During Growth. A. R. Dochez and O. T. Avery, New York.—p. 477.
40 *Acidosis and Acid Excretion in Pneumonia. W. W. Palmer, New York.—p. 495.
41 *Epidemiology of Lobar Pneumonia. E. G. Stillman, New York.—p. 513.
42 *Production of Antipneumococcic Serum. R. Cole and H. F. Moore, New York.—p. 537.
43 *Studies on Antiblastic Immunity. F. G. Blake, New York.—p. 563.
44 Experimental Atherosclerosis. I. Adler, New York.—p. 581.
45 *Prophylactic and Therapeutic Properties of Antitoxin for Bacillus Welchii. C. G. Bull, New York.—p. 603.

38. **Neutralization of Antipneumococcus Immune Bodies.**—In empyema fluids resulting from infection with pneumococci, there are present large amounts of soluble substances which have the property of neutralizing pneumococcus antibodies. Similar substances are found in the blood of infected rabbits. When immune serum is injected into infected rabbits the immune substances disappear very quickly, and therefore are prevented from activity in overcoming the infection. When immune serum is administered to patients severely infected with pneumococci, the immune bodies may also disappear very rapidly, and this disappearance is probably associated with the presence of such soluble substances in the blood. The serum only becomes effective when these substances are neutralized. The study of agglutination curves is of value in showing why in certain instances favorable results have not followed the use of immune serum. Cole says that it is important that in severely infected patients the serum be administered early in the disease and that the initial dosage be large.

39. **Elaboration of Specific Soluble Substance by Pneumococcus.**—A specifically reacting substance of bacterial origin is present in the cell-free fluids of young cultures of pneumococcus. This substance is present when the organisms are growing at their maximum rate and undergoing little or no cell death, and consequently its presence is not dependent on cell disintegration but represents the extrusion of bacterial substance by the living organism. The blood and urine of rabbits experimentally infected with pneumococcus contain a similar specific soluble substance during the early hours of the infectious process. Human beings suffering from lobar pneumonia have in their blood, and more frequently in their urine, a specific soluble substance of pneumococcus origin. The amount of this substance present in the urine varies in different individuals, and the presence of a large amount is of unfavorable prognostic import. This specific precipitin reaction in the urine is of diagnostic value. Rabbits injected with soluble pneumococcus material continue to excrete this substance for a considerable period of time. The specifically soluble substance obtained from bacterial cultures and from the urine during infection is not destroyed by boiling, by precipitation with alcohol, acetone, or ether, or by trypsin digestion.

40. **Acidosis and Acid Excretion in Pneumonia.**—There is excreted in the urine of persons ill with acute lobar pneumonia a large amount of organic acid which is free at a hydrogen ion concentration of 5.0. Acidosis as determined by the combined carbon dioxid in the plasma, Palmer says, is seldom, if ever, severe.

41. **Epidemiology of Lobar Pneumonia.**—According to Stillman, pneumonia of Type I and Type II are responsible for the majority of the cases of lobar pneumonia. Among the pneumococci found in the mouths of healthy individuals Type IV predominates, Type III is frequent, and atypical organisms of Type II are occasionally found. Healthy persons intimately associated with cases of lobar pneumonia

may harbor in their mouth secretions the highly parasitic pneumococcus of Types I and II. Occasionally a carrier of Type I or Type II pneumococcus is encountered in whom it is impossible to trace any contact with an infected patient. From the dust of homes where cases of pneumonia due to Types I and II have occurred, pneumococci of the same type may be recovered.

42. **Production of Antipneumococcic Serum.**—In the production of immune serum for therapeutic purposes Cole and Moore say that strict attention must be paid to the immunologic specificity of the bacteria used for immunization. At present the only serum of which the therapeutic value has been proved is that effective against Type I pneumococcus infection. This serum should have agglutinating power for Type I pneumococcus and should have the power of protecting mice against large amounts of virulent culture. Experiments have shown that for producing the primary immunity most rapidly several series of small doses of dead cultures should be given, the injections being made daily for six to seven days, followed by a week in which no injections are made. To produce the highest type of immunity, probably, living organisms are required. These should be given in moderate doses daily for three days, with an interval of a week between each series of injections. By following accurately the methods described, horses may be made to produce rapidly a high grade of specific serum. The observations so far made indicate the importance of employing small doses of culture frequently repeated in this form of immunization.

43. **Antiblastic Immunity.**—Antipneumococcus serum under certain conditions apparently inhibits or retards the metabolic activities of the homologous pneumococcus. Antipneumococcus serum exhausted of its agglutinin content possesses no inhibitory properties. The degree of inhibitory action of antipneumococcus serum parallels its agglutinating power. No evidence has been found to indicate that the inhibition of the metabolic activities of the pneumococcus by antipneumococcus serum is due to a specific anti-enzymotic property of the serum. The evidence which has been obtained indicates that the apparent inhibition of metabolic activity that occurs under certain conditions is due to agglutination of the pneumococci by the antipneumococcus serum and their consequent inability to grow in intimate contact with the whole medium. Antistaphylococcus serum inhibits the liquefaction of gelatin and the formation of a pigment by *Staphylococcus pyogenes-aureus*. Further experimentation is necessary to determine the mechanism of this inhibitory action. Antistaphylococcus serum does not inhibit those metabolic activities of *Staphylococcus pyogenes-aureus* essential to the growth and multiplication of the organisms.

45. **Antitoxin for Bacillus Welchii.**—Bull has been able to confer on guinea-pigs a passive immunity of about two weeks' duration to *B. welchii* toxin through a protective administration of the antitoxin. Guinea-pigs which had received a prophylactic dose of *B. welchii* antitoxin exhibited pronounced resistance to infection with the virulent bacilli for a period of twelve days. Established infections in guinea-pigs with *B. welchii* have been arrested and controlled by treatment with the antitoxin. Bull expresses the opinion that it will be possible to prevent *B. welchii* infection in man through the prophylactic use of the antitoxin, and developed cases of the infection may be controlled by therapeutic injections of the same agent.

Journal of Infectious Diseases, Chicago

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46 Surface Sterilization of Tissues for Bacterial Studies. D. M. Davis and R. Rosen, Baltimore.—p. 327.

47 *Coccobacillus (Foetidus) Ozenae of Perez. H. C. Ward, Detroit.—p. 338.

48 *Yeast-Like Fungi of Human Intestinal Tract. H. W. Anderson, Urbana, Ill.—p. 341.

49 *Stable Pollen Antigen. R. O. Clock, Pearl River, N. Y.—p. 387.

50 Food Accessory Factors (Vitamins) in Bacterial Culture with Especial Reference to Hemophilic Bacilli I. D. J. Davis, Chicago.—p. 392.

51 *Preservation of Antisheep Hemolytic Amboceptor in Glycerol. R. O. Clock and S. D. Beard, Pearl River, N. Y.—p. 404.

52 *Studies on Pneumococci and Streptococci. P. W. Aschner, New York.—p. 409.

47. **Coccobacillus Ozenae of Perez.**—The characteristics of the bacillus of Perez are summarized by Ward as follows: It is gram-negative, grows well in mixed broth cultures, causes a slow fermentation of glucose, decomposes proteins with the formation of mercaptan, produces a characteristic pigment in gelatin, and evokes specific agglutinins in rabbits. These characteristics are adequate to distinguish it from other bacilli, with which it may be associated, such as *B. pyocyaneus, B. coli, B. mucosus, B. proteus,* and *B. bronchisepticus*. The bacillus is readily cultivated from the exudate in ozena, with which condition it is closely associated.

48. **Yeast-Like Fungi of Human Intestinal Tract.**—Anderson says that yeast-like fungi are commonly found in the intestinal tract of man. They are of many species and, for the most part, such types as are commonly present in nature and known as "wild yeasts." It is probable that these yeasts are ingested with the food. The feces of persons suffering from gastro-intestinal disorders of various types do not yield a larger number of yeasts than those from healthy persons. There is no one species commonly present in the intestinal tract of either healthy persons or those suffering from gastro-intestinal troubles.

49. **Stable Pollen Antigen.**—Aqueous pollen extracts are unstable and rapidly deteriorate, losing their potency after about three weeks. Clock has prepared stable pollen antigens which he has subjected to rigid tests for stability. A mixture was made of equal parts by weight of the pollens of timothy, red top, June grass, orchard grass, rye, sorrel, dock, daisy, maize, ragweed, and goldenrod—these being the pollens which are known to cause the greatest number of cases of the vernal and the autumnal type of hay-fever. Pollen extracted in 9 per cent. salt solution gave an antigen that deteriorated quite rapidly. Pollen extracted in 66⅔ per cent. glycerol and 33⅓ per cent. saturated sodium chlorid solution gave an antigen that has proved to be remarkable, stable and potent and which remains sterile.

51. **Preservation of Antisheep Hemolytic Amboceptor.**—Fresh antisheep hemolytic amboceptors that were heated to 55 C. for one-half hour, and then mixed with an equal volume of glycerol did not deteriorate, but retained their original titer for three years. During that period anticomplementary properties did not develop. The glycerol in the glycerolated antisheep hemolytic amboceptor did not influence the complement fixation reaction. Fresh antisheep hemolytic amboceptors that were inactivated and then preserved in glycerol, as herein described, were not only remarkably stable but were also protected from bacterial growth for a period of three years.

52. **Pneumococci and Streptococci.**—For the differentiation of the organisms of the pneumococcus-streptococcus group for clinical diagnostic purposes, a morphologic and cultural method which has yielded good results is presented by Aschner. Based on a study of many organisms according to this method, a classification has been adopted which seems to be as definite as can be attained in the present state of knowledge. There is much evidence that the classification is artificial from a biologic point of view, as shown by the variations within the classes, and by the existence of intermediate and transitional forms, as well as by the mutations described. The following mutations have been observed: (1) encapsulated hemolytic streptococcus converted into a pneumococcus; (2) encapsulated anhemolytic streptococcus converted into a pneumococcus; (3) pneumococcus changed into anhemolytic streptococcus; (4) anhemolytic streptococcus converted into a hemolytic streptococcus; (5) *Streptococcus mucosus* changed into an anhemolytic streptococcus.

Journal-Lancet, Minneapolis

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53 Intraperitoneal Emergencies. R. L. Murdy, Aberdeen, S. D.—p. 629.

54 Tonsillectomy; Some Indications for, and Some Observations on Operation. R. A. Campbell, Minneapolis.—p. 634.

55 Syphilitic Pseudoparalysis (Parrot's Diseases). T. F. Riggs, Pierre, S. D.—p. 636.

56 Preparation of Material for Laboratory Examination. M. Herzberg, Vermillion, S. D.—p. 638.

57 Scientific Babies. H. B. Wentz, Verona, N. D.—p. 641.

Laryngoscope, St. Louis

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58 Society of Progressive Oral Advocates; Its Origin and Purpose. M. A. Goldstein, St. Louis.—p. 661.
59 Two Hundred Consecutive Tonsillectomies under Local Anesthesia. O. Wilkinson, Washington, D. C.—p. 667.
60 Operative Technic in Circumcision of Tonsil. F. G. Murphy, Mason City, Iowa.—p. 672.
61 Ozena Among Various Races of Earth. J. N. Roy, Montreal, Canada.—p. 679.
62 Unusually Large Polypus of Ethmoid. H. B. Orton, Newark, N. J.—p. 684.
63 Case of Traumatic Aphonia. T. A. Cheatham, Birmingham, Ala. —p. 686.
64 Control of Bleeding in Tonsillectomy. W. Dwyer, Hartford, Conn. —p. 688.
65 Lingual Tonsil; General Consideration and Its Neglect. H. B. Cohen, Philadelphia.—p. 691.
66 More Accurate Method of Recording Tracings on Glatzel Mirror. W. O. Bonser, Toledo, Ohio.—p. 701.
67 Ear, Nose and Throat Instrument Box. A. G. Bryant, Boston. —p. 703.
68 Bone Gripping Forceps. A. G. Bryant, Boston.—p. 704.
69 Glass Screen with Adjustable Standard. A. G. Bryant, Boston. —p. 706.

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70 Fracture Treatment from Standpoint of Orthopedic Surgeon. W. R. MacAusland, Boston.—p. 247.
71 Treatment of Alcoholism and Drug Addiction. C. Scheffel, Brookline, Mass.—p. 256.

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72 Surgical Syphilis. W. P. Coues, Boston.—p. 273.

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73 Acute Unilateral Kidney Infections of Hematogenous Origin. C. N. Peters, Portland.—p. 338.

July, No. 12

74 Medical Defense against Malpractice Suits. J. A. Spalding, Portland.—p. 375.

Medical Record, New York

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75 Certain Technical Refinements in Methods of Intravenous Injection. J. H. Stokes, Rochester, Minn.—p. 529.
76 Adenomyoma of Rectum. F. C. Yeomans, New York.—p. 535.
77 Nonspecific Protein Treatment of Psoriasis. E. Van Ness Van Alstyne, New York.—p. 538.
78 Epidermoid Carcinoma of Large Bronchus with Cavity Formation and Metastasis in Radius. E. Scott and J. W. Leist, Columbus. —p. 541.
79 Physical Attitude and Vital Efficiency. S. W. Geis, New York. —p. 545.

Nebraska State Medical Journal, Norfolk

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80 Symptom Complex and Treatment of Anterior Poliomyelitis. B. W. Christie, Omaha.—p. 413.
81 Cholecystostomy. B. R. McGrath, Grand Island.—p. 416.
82 Cholecystectomy. A. F. Jones, Omaha.—p. 419.
83 Diagnosis. C. C. Allison, Omaha.—p. 427.
84 Résumé of Present Views of Kidney Infections. C. C. Johnson, Creighton.—p. 421.
85 Blood Transfusion in Surgical Conditions. A. P. Condon, Omaha. —p. 437.

New York Medical Journal

September 1, CVI, No. 9

86 Internal Secretions as Related to Tuberculosis in Civil and Military Practice. C. E. de M. Sajous, Philadelphia.—p. 389.
87 Diagnosis of Surgical Lesions of Kidney and Ureter. A. R. Stevens, New York.—p. 395.
88 Deviation of Septum and Submucous Resection. H. M. Goddard, Philadelphia.—p. 398.
89 Intussusception in Children; Report of Three Operations. G. Torrance, Birmingham, Ala.—p. 400.
90 Tabes Dorsalis. M. Grossman, New York.—p. 402.
91 Studies in Acute Anterior Poliomyelitis. G. D. Heist, M. S. Cohen and J. A. Kolmer, Philadelpiaia.—p. 404.
92 Stethoscopic Electrovibratory Percussion. J. P. Hickey, San Francisco.—p. 405.
93 Nonfacetted Gallstone; Diagnosis and Medicosurgical Treatment. A. Peskind, Cleveland.—p. 406.

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94 Eye and Ear Surgeon in General Hospital. F. Allport, Chicago. —p. 581.
95 Vegetative Nervous System. T. J. Orbison, Los Angeles.—p. 584.
96 Physician and Patient. J. H. Marcus, Atlantic City, N. J.—p. 589.
97 Anesthetics in Orthopedic Surgery. W. G. Elmer, Philadelphia. —p. 591.
98 Serum and Blood Therapy. A. D. Kaiser, Rochester.—p. 595.
99 Syringomyelia and Leprous Neuritis. H. Climenko, New York. —p. 596.
100 Treatment of Sclerotic Middle Ear Diseases with Radium. Z. von Dworzak, Denver.—p. 598.
101 Dermoid Cyst. W. R. Jackson, Mobile, Ala.—p. 602.
102 Surgical Post on Firing Line. C. G. Cumston, Geneva, Switzerland.—p. 604.

New Orleans Medical and Surgical Journal

October, LXX, No. 4

103 Ureteral Stricture. H. W. E. Walther, New Orleans.—p. 309.
104 *Carbuncle of Upper Lip. M. Bradburn, New Orleans.—p. 314.
105 Lingual Tonsil—Frequently Overlooked Structure. J. B. Larose, New Orleans.—p. 319.
106 Hematemesis and Melena Due to Latent Aneurysm of Aorta. I. I. Lemann, New Orleans.—p. 322.
107 *Are Moving Pictures Injurious to Eyes? C. A. Bahn, New Orleans.—p. 328.
108 *Treatment of Pellagra. A. A. Herold, Shreveport.—p. 333.
109 Frequency and Early Diagnosis of Pulmonary Tuberculosis in Childhood. J. Signorelli, New Orleans.—p. 338.
110 Feebleminded. J. A. O'Hara, New Orleans.—p. 346.
111 Tolerance of Scrotum for Foreign Bodies. P. J. Gelpi, New Orleans.—p. 355.
112 Why Gastro-Enterostomy Fails to Relieve. W. R. Jackson, Mobile, Ala.—p. 361.
113 Diagnosis of Leprosy from Public Health Standpoint. G. W. McCoy.—p. 364.
114 Granuloma Venereum. H. de B. Aragao, Rio Janeiro.—p. 369.
115 Dysenteric Endamebae. H. de B. Aragao, Rio Janeiro.—p. 374.

104. **Carbuncle of Upper Lip.**—In considering the treatment of carbuncle of the upper lip Bradburn urges early incision with injection of 5 per cent. phenol solution into the infiltrated tissue. He cites four cases with 50 per cent. mortality.

107. **Moving Pictures and Eyes.**—Bahn believes that moving pictures under favorable conditions do not cause as much fatigue as the same period of concentrated reading. Under unfavorable conditions, moving pictures cause increased fatigue which, if continued, produces symptoms that are unpleasant and may be harmful. Most persons who complain that moving pictures cause ocular discomfort have some ocular defect. A review of the literature to date records no permanent harm to the eyes from moving pictures.

108. **Treatment of Pellagra.**—Cases of five patients are reported by Herold treated by his original method, normal horse serum administered intravenously. He claims for this treatment only that it does in a few days what proper feeding takes weeks to do, and that it will tide over and markedly improve that very troublesome class of patients whose mouths are in such condition that feeding is almost, if not quite, impossible.

New York State Journal of Medicine

September, XVII, No. 9

116 *Treatment of Heart Disease by Drugs. W. D. Alsever, Syracuse. —p. 396.
117 *Treatment of Heart Disease by More and Longer Supervision. R. H. Halsey, New York.—p. 399.
118 *Hydrotherapy of Heart Disease. H. Schoonmaker, Clifton Springs. —p. 401.
119 Testing of Heart's Functional Capacity and Its Relation to Graduated Exercises in Cardiac Insufficiency. T. B. Barringer, Jr., New York.—p. 403.
120 *Whooping Cough is Prevented by Vaccination. G. W. Goler, Rochester.—p. 411.
121 Epidemic of Bacillary Dysentery. J. A. Smith, Albany.—p. 413.
122 Rôle of Food Idiosyncrasies in Practice. F. B. Talbot, Boston. —p. 419.
123 *Treatment of Dysthyroidism by Roentgen Rays. M. B. Palmer, Rochester.—p. 425.

116. **Drugs in Treatment of Heart Disease.**—The drugs which have been used in the symptomatic or palliative treatment of heart disease are legion, which proves their inefficiency. The majority are not worth naming, but a few of them have definite and even life-saving value. These few are discussed by Alsever. The digitalis group, consisting of digitalis, strophanthus, squills, apocynum, etc., stimulates directly all forms of muscle tissues, notably the heart and the vasomotors, and also the medullary centers, notably the pneumogastric and vasoconstrictor centers. As a result of these actions, the heart beats more powerfully and more slowly, the vasomotors contract and often diuresis ensues. These effects are of most importance clinically in auricular fibrillation and auricular flutter, and the results obtained in these disorders have been so marked and so valuable as to

give digitalis its justly great reputation in heart disease. Other types of irregular hearts and hearts with normal mechanism also respond to digitalis but in less degree. Tincture of strophanthus has sometimes been substituted for digitalis with advantage, but in the average case it is less dependable. Its action is practically the same as digitalis. Strophanthin, the active glucoside of strophanthus, is of inestimable value, because by giving $\frac{1}{100}$ grain intravenously one may develop digitalis effects in fifteen minutes. It is safer, however, to give $\frac{1}{250}$ grain and repeat every two hours for three doses, if needed. If a patient has been taking digitalis the administration of strophanthin intravenously is unsafe, because the combined effect may be overwhelming. Squills and apocynum are usually avoided because of their tendency to upset the digestive tract, but apocynum sometimes relieves cardiac dropsy when digitalis fails.

Strychnin should not be used in the belief or hope that it will stimulate the heart any more than other tissues. The caffein group is of considerable value in heart disease. Caffein, theobromin and theophyllin are the members of interest. Sodiosalicylate of theobromin is a powerful diuretic, and oftentimes of great value in cardiac dropsy. It increases the urine through direct stimulation of the kidneys rather than through action on the heart. In doses of from 10 to 15 grains, three or four times daily, it commonly produces marked diuresis in one or two days. When diuresis is established it is well to omit the drug, administering it again later in case of need. Theophyllin is more powerfully diuretic, but it is more nauseating and more expensive, so that theobromin is usually to be preferred. Caffein has been and still is used very largely as a heart stimulant or so-called tonic. Its effect is manifested almost entirely on the central nervous system, particularly on the brain itself. It has a little power to stimulate muscle fibers, but the heart responds no more than all the skeletal muscles. Alcohol is a local stimulant, but after absorption its action is purely depressing, affecting especially the central nervous system and beginning with the highest functions of the mind. Epinephrin is decomposed so quickly in the body that its effect must always be transient, and it is absorbed so slowly from hypodermatic injection that it is difficult to say just what action should be expected. Intravenous injections are followed by slower and stronger heart action and vasoconstriction, but when given by other methods these effects are very uncertain and fleeting.

The nitrites paralyze the vasoconstrictor mechanism and the vagus center, almost reversing the action of digitalis. Inhalations of amyl nitrite produce this effect in a few seconds, and the effect terminates in two or three minutes. Nitroglycerin and sodium nitrite by mouth produce this effect in two or three minutes, and the effect ends in one-half hour to three hours. Erythrol tetranitrate produces the same effect in one hour, and the action may continue for five hours. The nitrites are of great value in relieving the pain of angina pectoris and in obtaining relief from dangerous high blood pressure. It is usually unwise to attempt to beat down high blood pressure, except in an emergency. If a sustained depression of blood pressure is desired it may be obtained by repeating nitroglycerin every two hours or by giving erythrol tetranitrate four to six times a day. Aconite slows the heart by stimulating the vagus center but does not affect the vasomotors, consequently it lowers blood pressure. It may be useful in overacting hearts, as in fevers and in dangerous sustained high pressure.

117. **General Treatment of Heart Disease.**—Halsey emphasizes the importance of constant supervision, frequent rest periods or preventive convalescence and attention to the condition of the teeth and tonsils of children. He says that prevention of the occurrence of heart disease demands annual physical examinations of every individual.

118. **Hydrotherapy of Heart Disease.**—Schoonmaker summarizes his article as follows: First, hydrotherapy in heart disease is based on physiologic response to stimuli and is therefore scientific. Second, in hydrotherapy there are more possibilities for good in the treatment of heart disease than in any other single agent except rest. Third, the saline carbonated bath is especially helpful in the treatment of heart disease, because it makes possible the giving of cold tub baths without undue shock and provides a wide limitation in temperature, time and strength of bath. Fourth, as a therapeutic agent hydrotherapy is not incompatible with any other.

120. **Whooping Cough and Vaccination.**—More than 10,000 children have been vaccinated against whooping cough in Rochester. Less than 5 per cent. of the vaccinated children came down with the disease. They administer four doses four days apart, 500, 1,000 and 3,000 million. Two children exposed to whooping cough just after being vaccinated did not contract whooping cough until a year afterward. One of these patients had whooping cough in such a mild form that it was somewhat difficult to make a diagnosis; the other had whooping cough severely. In thirty-five patients who came down with the disease after whooping cough vaccinations, about half of them seem to have had the disease in modified form.

123. Abstracted in THE JOURNAL, June 9, 1917, p. 1777.

Philippine Journal of Science, Manila

November, 1916, XI, Sec. B, No. 6

124 Cultivation of Pathogenic Fungus which Exhibits Botryoid and Leukocytelike Parasitic Forms. H. W. Wade, Manila.—p. 267.
125 Fatal Parasitic Infection in Herd of Cattle and Goats in Ambos Camarines Province. W. H. Boynton and L. D. Wharton, Manila.—p. 285.

West Virginia Medical Journal, Huntington

August, XIII, No. 2

126 Pellagra. C. A. Barlow, Spencer.—p. 41.
127 Erysipelas. O. H. Heffman, Thomas.—p. 45.
128 Sins of Father. W. C. Slusher, Bluefield.—p. 49.

September, No. 3

129 Back to Pharmacopoeia. T. Nunemaker, Williamson.—p. 85.
130 Acute Acquired Diverticulitis. W. H. St. Clair, Bluefield.—p. 88.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Bristol Medico-Chirurgical Journal

July, XXXV, No. 133

1 Fatigue Induced by Labor. A. F. S. Kent.—p. 47.
2 Gunshot Wounds of Peripheral Nerves. J. M. Clarke.—p. 61.
3 Prevention of Sepsis in War Wounds, with Special Reference to Carrel-Dakin Method. J. Swain.—p. 68.
4 *Acute Pancreatitis; Its Treatment, Record of Three Cases. C. A. Morton.—p. 80.
5 Rectal Diverticula as Causative Factor in Pelvic Inflammation in Women; Report of Two Cases. W. C. Swayne.—p. 91.

4. **Acute Pancreatitis.**—The first case reported by Morton is of special interest from the fact that, although when the abdomen was opened the presence of fat necrosis called attention to the condition of the pancreas, yet when the lesser sac of the peritoneum had been opened by division of the gastrocolic omentum, no definitely abnormal condition of the pancreas could be discovered, nor was the pancreas found to be diseased postmortem until it had been removed from the body, and then some lymph and hemorrhage was seen on its posterior aspect only; and on cutting into it some areas of slight hemorrhage and yellow infiltration were found. The morbid condition was almost confined to the middle of the organ, and although this was the part examined at the operation, none of these morbid changes could have been made out on inspection or palpation of the presenting aspect of the organ, for they were only discoverable on its posterior aspect. The second case is interesting and instructive from the fact that the vomit was fecal. The great interest of the third case was the apparent recovery of the patient after the acute stage. Serious symptoms, however, recurred and led to a fatal termination. The patient had so far recovered from the acute stage (which seemed probably due to the passage of gallstones or their retention in the common duct), that Morton discussed with the patient the desirability of having an operation for removal of gallstones before another attack came on, and yet at that time the acute pancreatitis must have been passing into the sloughing stage. In all three

of the cases there was a history of recurrent attacks of pain in the upper abdomen, not followed by jaundice. In one of the cases the gallbladder contained a large stone, and in another many small stones, and in the third no stones were found in it or in the common duct. It is unlikely that if the attacks in the third case, in which no stones were found in the gallbladder, had been due to the passage of gallstones, that every stone should have been passed before the onset of the fatal illness. Therefore, in this case at any rate, the recurrent attacks were probably not of the nature of gallstone colic, and it is doubtful if they were in the other two.

Indian Medical Gazette, Calcutta

August, LII, No. 8

6 *Experience in Tartar Emetic Treatment of Kala-Azar Including Its Use in Young Children. L. Rogers.—p. 265.
7 Ascaris Lumbricoides and Coprophagia. C. Lane.—p. 269.
8 Ascaris Infection in Man, Pig, Rat and Mouse. F. H. Stewart.—p. 272.
9 Hydatid Disease in Kathiawar. P. T. Kothary.—p. 273.
10 New Operation for Cataract. L. D. Green.—p. 275.
11 Ophthalmic Work in Madras H. Kirkpatrick.—p. 276.
12 Irrigation After Extra-Capsular Extraction of Cataract; Report of Five Hundred Cases. E. A. R. Newman.—p. 280.
13 Divergent Views on Suppuration After Cataract Operation. P. H. Shanker.—p. 281.
14 Medicolegal Case. N. K. Kallianwalla.—p. 284.

6. **Tartar Emetic Treatment in Kala-Azar.**—In no case in which the tartar emetic treatment has been persevered with has tartar emetic proved unsuccessful in thirty-five consecutive cases of kala-azar in Europeans, who can be kept under observation much longer than Indian patients, the only death having taken place from complicating phthisis several weeks after the kala-azar parasites had been proved to have disappeared from the spleen.

Lancet, London

September 15, II, No. 4907

15 *Cases of Tetanus Treated in Home Military Hospitals. D. Bruce.—p. 411.
16 War Nephritis. C. E. Sundell and A. T. Tankivell.—p. 414.
17 *Treatment of Entameba Histolytica Carriers with Emetin Bismuth Iodid. D. G. Lillie and S. Shepheard.—p. 418.
18 Treatment of Functional Contracture by Fatigue. E. F. Reeve.—p. 419.
19 Active Treatment in Established Eclampsia. G. I. Strachan.—p. 421.
20 Two Cases of Gunshot Fractures of Mandible with Loss of Substance R. J. Green.—p. 422.
21 *Effect of Roentgen Rays on Diseases of Bacterial Origin. C. Kempster.—p. 423.
22 Reflexes in Tetanus. A. G. Gibson.—p. 424.
23 Unusual Form of Hypospadias. T. J. Thomas.—p. 425.
24 Biologic Aspects of Warfare. H. Campbell.—p. 433.

15. **Tetanus Treated in Home Military Hospitals.**—In the 100 cases of tetanus analyzed by Bruce the mortality was 31 per cent. The ratio of the number of cases of tetanus to the wounded has fallen greatly since the beginning of the war, due in all probability to a great extent to the introduction of prophylactic injections of antitetanic serum. The incubation period tends to become longer, hence there are only twelve cases reported with an incubation of ten days or under. Only ten patients are reported to have received secondary prophylactic injections of antitetanic serum in home hospitals. In regard to the therapeutic effect of antitoxic serum the evidence is still inconclusive. The rate of mortality in generalized tetanus is 34.4 per cent., in localized tetanus, 0.0 per cent.

17. **Entameba Histolytica Carriers Treated with Emetin Bismuth Iodid.**—The treatment of the 104 cases dealt with in this report was carried out in a special ward set apart for the purpose. The patients were under the care of one medical officer in order to keep the conditions of treatment as uniform as possible. The keratin-coated tabloids and salol-coated pills were given in doses of 3 grains per day for twelve consecutive days without any additional treatment. The tabloids and pills were given entire as a full dose during breakfast. A patient was considered to be cured when at least six or seven negative tests were obtained over a period of not less than seven weeks from the termination of the course of treatment. It appeared (*a*) that carriers of *E. histolytica* who had not had any injections of emetin hydrochlorid were cured to the extent of 78 per cent. by two courses of the salol-coated emetin bismuth iodid pills. (*b*) In the case of men who had had emetin injections, 72.8 per cent. were cured by two courses of the salol-coated pills. (*c*) In the case of men who had not had emetin injections, 70 per cent. were cured by two courses of the keratin-coated tabloids. (*d*) In the case of men who had had emetin injections, 45.4 per cent. were cured by two courses of the keratin-coated tabloids.

For comparison with the above percentages of cures by a maximum of 72 grains of emetin bismuth iodid carried out in the special ward, Lillie and Shepheard give the number and percentage of cures in the other wards of this hospital. The number of grains of emetin bismuth iodid which these patients received varied from 36 to 200. A patient was regarded as cured after not less than five negative examinations over a period of not less than five weeks after the end of treatment. Out of 160 patients treated 142 were cured, namely, 88.7 per cent. There is no evidence that the length of time between the dates of onset of dysentery symptoms and the treatment has any effect on the chances of cure by emetin bismuth iodid. There is no ground for the belief that the vomiting diminishes the chance of cure by the emetin bismuth iodid treatment. There is nearly as much vomiting among the patients cured as among those cases in which there is relapse. The age of the patient has no effect on the chance of cure by the drug. But there is evidence to show that men over 40 years of age vomit less while undergoing treatment. The salol-coated pills are a distinct improvement on the keratin-coated tabloids from a curative point of view. They also cause less vomiting and loss of weight.

21. **Roentgen Rays and Diseases of Bacterial Origin.**—Kempster says that the effect of roentgen rays on diseases of bacterial origin is that they have not any germicidal powers, but that they have a decided inhibitory effect on the reproduction and increase of the germs, and that they produce stimulation of the living tissues leading to an increased phagocytosis, which is capable of destroying an unreproductive colony of micro-organisms.

Practitioner, London

September, XCIX, No. 3

25 War Injuries of Jaws. N. G. Bennett.—p. 201.
26 Influence of Gonococcus on Female Pelvic Organs. R. A. Gibbons.—p. 217.
27 Recent Progress in Gynecology. F. McCann.—p. 238.
28 Six Months' Anesthetic Experience at Casualty Clearing Stations on the Somme. C. Corfield—p. 251.
29 Bearer Work on the Somme. W. B. Jepson.—p. 255
30 Compensatory Hypertrophy of Renal Secreting Tubules in Cases of Granular Contracted Kidneys. F. P. Weber.—p. 260.
31 Recent Public Health Work. J. Priestley.—p. 262.
32 Recollections of Surgical Work in Serbia. L. M. Chesney.—p. 274.
33 *Bronchopneumonia Following Pulmonary Hemorrhage. C. G. Reinhardt-Goodwin.—p. 288.
34 Case of Retention of Urine from Bullet in Urethra. A. Robin.—p. 291.
35 *Chronic Aspirinism. W. F. Stiell.—p. 293.

33. **Bronchopneumonia Following Pulmonary Hemorrage.**—Among 1,000 odd cases admitted to the sanatorium of which Rheinhardt-Goodwin is resident medical officer in the last ten years, only one case of bronchopneumonia following hemoptysis has been recorded, while there have been many hundreds of cases of pulmonary hemorrhage. A woman, aged 27, was admitted, Sept. 30, 1916. There were signs of active disease in the right apex in front, and at the right base behind. The patient appeared to improve and was doing walks of 2 miles daily with satisfactory temperatures. Toward the end of January, 1917, however, there were a few small hemorrhages. Despite prolonged rest in bed there was further bleeding from the lungs. Many times her condition seemed incompatible with life, but each time she improved again. Between May 1 and 14 the patient seemed better, the color had improved, and she was able to take nourishment more freely. May 14, the temperature began to swing more during the twenty-four hours, cough returned, and there was much tenacious expectoration, which was expelled with difficulty. Sweating was profuse. The patient died quite suddenly on April 23. She became more cyanosed, later unconscious, and

died with signs of asphyxia. At the commencement of the rise of temperature a hasty examination showed signs of consolidation over the back of the right lung, where there was bronchial breathing, and the same condition was present in the left apical region. Later in the course of the case the bronchial breathing over the right back gave place to loud tubular breathing and coarse creptitations, and these extended around to the base in front. Treatment throughout the case was symptomatic. The points of interest about the case seem to be: (1) the length of time, thirty-four days, the patient survived the onset of the bronchopneumonia; (2) the fact that morphin was not given to check the hemorrhage that apparently caused the complication, and could not, therefore, have been a factor. It was thought unwise to administer morphin on account of the violent vomiting caused on a previous occasion; (3) the three stages into which the course of the illness can be divided: (*a*) the first eleven days when the case conformed to the textbook description of a case of aspiration pneumonia, with continuous temperature, cyanosis, rapid respirations and pulse, absence of cough and sputum and no return of hemorrhage; (*b*) the next twelve days, during which the patient felt much better; (*c*) the last eleven days, when cough and sputum returned, sweating was profuse, the temperature became remittent in type, and the signs and symptoms suggested rapidly breaking down lung with cavity formation.

35. **Chronic Aspirinism.**—A woman, aged 50, suffering with typical rheumatoid arthritis, was in the habit of taking 10 grains of aspirin twice daily for seven years. During the first six years of the treatment the patient did not exhibit a single untoward sign of aspirin poisoning. There were no signs of gastro-intestinal irritation or of cardiac or mental depression. The first untoward sign of aspirin poisoning ensued in January, 1917, in the form of an intractable simple conjunctivitis, the patient complaining of "sand in the eyes." Examination showed a well marked hyperemia of both the palpebral and ocular conjunctiva; there was a slight degree of chemosis and considerable lacrimation. A week later the patient gradually became troubled with an urticaria which was not relieved by either dietetic or by the usual local or internal remedies. In a few days the patient was entirely covered by a typical urticaria major. The rash, which was present both day and night, assumed in parts the characters of an acute circumscribed edema, and elsewhere a severe urticaria bullosa. The symptoms rapidly became somewhat alarming, the patient was weak from insomnia, there were obvious signs of intestinal irritation in the form of diarrhea and vomiting, there was massive edema of the tongue and fauces, so that dysphagia became a marked symptom, and even an urgent tracheotomy was only averted by a prolonged administration of ice and ice water combined with astringent gargles. Vision was entirely obscured by an extreme palpebral edema. The urine gave an intense bluish violet reaction when tested with liquor ferri perchloridi, but the exact percentage of salicyluric acid was not estimated. A diagnosis of chronic aspirinism was made, and the drug rigidly withheld. Medicinal treatment consisted of 5 grains of ichthyol and a mixture containing liquor arsenicalis, tincture of belladona and calcium lactate, three times a day. Bromids were administered in large doses every night. At the end of the seventh week all trace of the urticaria had vanished and the urine was again normal. An interesting feature of the case is the fact that since the onset of the urticaria, although all aspirin had been discontinued, beyond the bony deformities all traces of the rheumatism have been entirely absent.

Quarterly Journal of Medicine, Oxford

July, X, No. 40

36 *Gunshot Wounds of Chest as Seen at Base Hospital in France. A. B. Soltau and J. B Alexander.—p. 259.
37 *Effect of Digitalis in Heart Disease with Pulsus Alternans. J. D. Windle.—p. 274.
38 Critical Review of Treatment of Syphilis. L. W. Harrison.—p. 291.
39 Purpura in Meningococcal Infections; Report of Cases. T. R. Elliott and H. W. Kaye.—p. 361.

36. **Gunshot Wounds of Chest.**—Among the 139 cases reported by Soltau and Alexander there were 80 cases of hemothorax, 13 of pneumothorax, 31 of collapse alone, 11 cases of nonpenetrating wounds with hemoptysis, 5 cases of penetration with no physical sign, 1 case of concussion pneumonia. Sepsis occurred in 13 cases as follows: following hemothorax (of which 4 were characterized by sudden gas formation, 10 cases; following pneumothorax, 2 cases; with gangrene of lung, 1 case. Mortality: total 10, or 7.1 per cent., as follows: from secondary peritonitis (probably pneumococcal), 1; from pneumothorax and associated tuberculosis, 2; from hemothorax and bronchopneumonia, 1; from gangrene of the lung, 1; from hemothorax and tetanus, 1; from hemothorax with pneumonia and pericarditis, 1; from pneumothorax (1 a few hours after arrival), 2; from pyohemothorax with subphrenic abscess, 1; contralateral collapse was noted in 24 cases.

37. **Effect of Digitalis in Heart Disease.**—Windle's experience of the clinical use of digitalis indicates that the drug has little, if any, power to bring about pulsus alternans in healthy or diseased conditions of the heart; and that in cases of heart disease in which this form of pulse is present there is no evidence that digitalis increases the irregularity; on the other hand, it frequently has the opposite effect, that is to say, the pulses become more equal in force and not uncommonly disparity in strength of the beats is temporarily abolished under the use of the drug, and the patients' symptoms for the time being are improved in all respects; moreover these good results not seldom ensue coincidently with a considerable rise in the blood pressure. Windle has given digitalis for various reasons to persons with healthy hearts, and out of a number of such cases in which the drug was pushed until its full physiologic effect on the stomach was produced, cardiac irregularity, namely, sinus arrhythmia and extrasystoles, ensued in several, but pulsus alternans occurred in one instance only. Windle suggests that it is probable that the beneficial effects of digitalis in heart disease with pulsus alternans are largely due to its action in restoring the tonicity of the heart and slowing its rate, although comparison of the tracings taken before and after the use of the drug suggest that it may exert an improving effect on the essential cause which gives rise to the pulsus alternans; that this supposition is improbable is evidenced by the fact that under certain circumstances the alternation is readily reinduced.

Bulletin de l'Académie de Médecine, Paris

August 28, LXXVIII, No. 33, pp. 151-161

40 Rice to Supplement Wheat Supply. E. Maurel.—p. 152.
41 *Disturbance in the Pupil Reactions after Shell Shock. G. Guillain and A. Barré.—p. 158.
42 Aluminum Shell Cover for Skull Defect. E. Monod-Herzen.—p. 159.

41. **The Pupil Reactions After Shell Shock.**—This report is summarized in the Paris Letter.

Journal d'Urologie, Paris

August, VII, No. 1, pp. 1-102

43 *War Wounds of the Bladder. F. Legueu.—p. 1.
44 *Bilharziosis. Diamantis.—p. 9; Diamantis.—p. 17; L. Morel and I. Maldonado.—p. 27; Diamantis and Lotsy.—p. 59.
45 *Objective Symptoms of Essential Incontinence. P. Nogués.—p. 39.
46 *Rupture of Hydrocele in the Vaginalis. C. Ramos.—p. 45.
47 Blood Cyst in the Prostate in Elderly Diabetic. A. Castano.—p. 65.
48 Urethra with Five Openings. Girard.—p 67.

43. **Wounds of the Bladder.**—Legueu has encountered 43 cases of gunshot wounds involving the bladder predominantly, and has been surprised at the immediate and remote mildness of the clinical picture therefrom. In some cases the bladder had been perforated or the projectile had passed entirely through it, and yet there were no serious symptoms from this at any time. In 6 cases of this kind, no operation and no special treatment was given. In 15 of the total 43 cases, an opening into the rectum or colon had been created by the projectile; in two cases the opening could be felt with the finger in the rectum. Even with these fistulas the evolution of the bladder wound was benign in 12 of the 15, the fistula healing spontaneously in the course of a few weeks or months. A vesicorectal fistula consequently does not call for operative

treatment as a matter of course. Before the projectile reached the bladder it had fractured the bone in 25 of the total 43 cases; the bone involved was the pubis in 17 cases, the sacrum, ilium and hip joint in 2 each. The fracture being compound and bathed in urine leads inevitably to infection unless the hole bored by the missile is given a prompt surgical clearing out, and the urine diverted by suprapubic cystostomy. In the 11 cases in which this was done at once, the wound healed smoothly, and in the 15 cases in which it was done at a later stage, it materially improved conditions. Even although this may not divert all the urine, it answers the purpose sufficiently. Otherwise there is liable to be a persisting fistula between the bladder and the site of the fracture after the skin wound has healed. Pus and sequesters from the suppurating process thus kept up in the bone, find their way into the bladder and start the production of calculi. Calculi may also develop from foreign bodies carried into the bladder with the projectiles. He found calculi in 10 of the 43 cases. In some the nucleus was a scrap of shell. Foreign bodies were removed from the bladder in 12 cases, including bullets in 3, scraps of shell in 5 and sequesters of bone in 4; this group does not include the foreign bodies removed at the first operation. He emphasizes that an extensive bladder wound from which urine escapes at once through the skin should be treated on the same principles as any other war wound, immediate clearing out of the passage made by the projectile, removing all foreign particles even down into the bladder, and sterilizing the whole passage.

44. **Emetin in Treatment of Bilharzia Hematuria.**—Diamantis discusses the clinical picture of bilharziosis with and without infectious complications, and reports striking results from emetin in treatment of noninfected cases. He administered the emetin intravenously, at two or three day intervals, commencing with 0.02 c.c. and increasing rapidly to 0.10, which dose he never surpassed. From fifteen to twenty injections generally answered the purpose. One patient was cured with eight, the largest dose 0.07. Vomiting and nausea are rare, but dizziness is constant, and there is always more or less pronounced asthenia, resembling the weakness liable to follow influenza. He expatiates on the mildness of bilharziosis, saying that the presence of the parasite in the veins does not cause any disturbance, only the passage of the eggs laid in enormous numbers, and passed off in the excreta. In the infected cases no benefit from the emetin was perceptible and the emetin asthenia tended to debilitate further.

44. **Bilharziosis.**—Morel discusses the wide distribution of the *Schistosomum hematobium*. All Africa, the eastern shore of the Mediterranean, the Asiatic shore of the Indian Ocean, and parts of Australia are known to be infested, and the war is bringing it to Europe. He describes four imported cases recently encountered at Paris. From his experience and review of the literature he concludes that there is no specific treatment; emetin and salvarsan seem ineffectual. The only local measure that has shown any efficacy is iodin vapor treatment, and even this acts only on the bladder itself, not killing the parasite or its eggs.

Diamantis and Lotsy report from Cairo a case in which the passage of a kidney stone apparently injured the ureter on its way, thus affording a predisposition so that casual infection with the bilharzia soon afterward caused the parasite to locate in the ureter. The resulting ureterovesical bilharziosis was revealed by radiography, the diagnosis confirmed by finding ova.

45. **The Objective Symptoms of Essential Incontinence of Urine.**—Nogués comments on the frequency of incontinence under the physical and emotional stress of the war. In civil practice the sphincters persist continent under ether or chloroform, but when given to the wounded within eight or ten hours of their wound, involuntary emission of stool and urine is frequent. He has found that with men inclined to incontinence, the Ambard uremic constant may show abnormal conditions. Utteau has noted further a higher proportion of waste contents in urine voided involuntarily. Microscopic examination of the urine may thus suggest an objective basis for the incontinence. This is evidenced further by changes in the contracting power of the vessel. A simple test for this is the injection of from 60 to 100 c.c. of tepid medicated water. With exaggerated contractility, the water is expelled abruptly and it is impossible to introduce more. Or the fluid may enter readily and not be expelled at all notwithstanding tenesmus. The response to these tests of the contractility cannot be controlled by the will. Cystoscopy often shows trabeculae in the bladder with incontinence, and the lumbar puncture fluid showed abnormally high pressure in eight of fifteen cases tested while the albumin content was abnormally high in 94 per cent., namely, above 0.10 gm. Even accepting 0.25 as the extreme physiologic limit, the albumin content was much above this in 27 per cent. This high albumin content may act on the predisposed nerves and thus bring on the incontinence. When one or more of these tests and signs are positive in a case of incontinence, the presumption is against simulation.

46. **Rupture of Hydrocele.**—Besides eight traumatic cases and seven cases of rupture from muscular effort, Ramos has collected a number of cases in which the rupture occurred without effort or traumatism. He reports a personal case in both the first and the last groups, and urges resection of the serosa as it is always more or less pathologic. Otherwise, after absorption of the effusion and obliteration of the perforation, the tumor rapidly returns.

Paris Médical

September 1, VII, No. 35, pp. 177-208

49 *Recent Progress in Otorhinolaryngology. L. Dufourmentel.—p. 177.
50 Calcium Hypochlorite plus Boric Acid as Dressing Powder after Mastoid and Sinus Operations. (La poudre de Vincent dans les évidements.) Guisez.—p. 184.
51 Primary, Latent Mastoiditis Setting Up Distant Extradural Abscess. R. Moreaux.—p. 187.
52 Stomatology During the War. L. Frison.—p. 190
53 Drainage with Operations on the Mouth. H. Chaput.—p. 200.
54 Treatment of War Fracture of the Jaw. L. Dufourmentel, L. Frison, F. Bonnet-Roy and C. Brunet.—p. 202.

September 8, No. 36, pp. 209-224

55 *Associated Injury of Last Four Cranial Nerves. (Syndrome condylo-déchiré postérieur d'origine endocranienne.) J. A. Sicard and L. Rimbaud.—p. 209.
56 *Mercurial Anuria. G. Milian and M. de Saint-Avid.—p. 212.
57 Paralysis of Recurrent Nerve after War Wound at Base of Neck. Guyot and A. d'Auriac.—p 217.
58 Extraction of Projectiles under Screen Control and Protection of the Radiologist. L. Bouchacourt.—p. 219.

49. **Progress in Otorhinolaryngology in 1917.**—Among the recent advances cited is mentioned the method of maintaining respiration and giving the anesthetic through a fine cannula introduced directly into the larynx by puncturing the cricothyroid membrane. Operations on the face and neck can be done then as tranquilly as if remote from the respiratory apparatus. Intratracheal intubation answers the same purpose but this requires more complicated instruments and irritates the vocal cords. Deafness is now classed as exempting from military service when loud speaking is heard only close to the ear. When loud speaking can be heard no farther than one meter, this compels acceptance only for the auxiliary military service; heard at four or five meters is the limit requirement for active service. Eleven different styles of tests for the hearing may be used. They include what is known as the cochleopalpebral reflex, that is, the involuntary winking when a sudden loud sound is heard close to the ear. This reveals simulation of deafness. The double tuning fork test is also instructive. Two tuning forks giving the same tone but with different intensity are placed at the same distance from each ear. With normal hearing the resulting unison is heard only on the side of the loudest tone. One tuning fork can be silenced to test the hearing. The simulator does not learn lip reading like the truly deaf. After a month of training he cannot read from the lips if a noise drowns what is being said. Another trick test is to tell the subject, speaking from some little distance, to raise his hand when he hears the spoken word. Then the examiner, speaking some syllable over and over again, walks toward the subject. The simulator raises his hand as the examiner comes quite close, thus showing that he had heard the command at a distance. Lip reading seems to be the only means of relief for the truly deaf.

55. **Associated Paralysis of Last Four Cranial Nerves With and Without Sensory Symptoms.**—Sicard and Rimbaud describe the clinical picture presented when a projectile has entered the region immediately below the anterior condylar foramen and the jugular foramen, inducing paralysis of the last four cranial nerves, and of these alone, with this exocranial type of injury. There is also an intracranial set of symptoms of the same type, but this can be induced only by an intracranial affection. In a typical case described, the trouble was of syphilitic origin and materially improved under specific treatment. In this case there were also sensory-motor disturbances in the limbs on that side. There was evidently some process involving the meninges and nerve roots in the left half of the cervicobulbar region. In the projectile cases, the paralysis involved the velum and larynx, the sternocleidomastoid and trapezium, the pharynx and heart nerves (evidenced by extreme tachycardia), and there was also atrophy of that side of the tongue. The young man had been shot with a revolver, the bullet entering back of the left mastoid region. At necropsy after pneumonia two years later the bullet was found in contact with the last four cranial nerves.

56. **Mercurial Anuria.**—The mercurial poisoning in the young man was manifested mainly by gastro-intestinal uremia, vomiting, diarrhea and Cheyne-Stokes dyspnea with a sensation of oppression in the chest, and anuria complete for two days and almost absolute during the three following days. While the anuria lasted, the young man complained of incessant chilliness, but there was no edema, headache, myosis nor gallop sound. During the polyuria reaction period, symptoms developed suggesting severe peritonitis except that the pulse was regular and slow and the temperature normal. Milian explains this as the result of the loss of fluids, the man having vomited more or less constantly for nine days, and the polyuria following the anuria having drained the body of too much fluid, causing a condition of dehydratation like that of cholera. Milian did not venture to make a saline infusion, fearing to bring on edema, but he gave an intravenous injection of a hypertonic glucose solution, 60 gm. of glucose in 200 c.c. of distilled water. The result, he says, was *réellement miraculeux*.

Presse Médicale, Paris

August 16, XXV, No. 46, pp. 473-480

59 *Mixed Vaccination against Typhoid and Paratyphoid. F. Widal and A. T. Salimbeni.—p. 473.
60 *Oriental Malaria as seen at Marseilles. P. Ravaut and others. —p. 473.
61 *The Arterial Tension with Aortic Insufficiency. L. A. Amblard. —p. 476.
62 *Experimental Shell Shock. A. Mairet and G. Durante.—p. 478.

59. **Single Mixed Vaccination Against Typhoid and Paratyphoid.**—Widal and Salimbeni state that they have now a record of 12,000 men inoculated with a single dose of a vaccine consisting of equal numbers of typhoid, paratyphoid A and paratyphoid B bacilli. The dose was 1.5 c.c., containing six thousand million germs, heated, but without antiseptic. This method of vaccination has been in use for over a year, but sufficient time has not yet elapsed for the majority of the men for a decisive judgment as to its efficacy. They made a point of inoculating the men with this single dose, and repeating it in part of the men, hoping to establish thus the relative value of the single and double vaccination. For the present, they counsel the usual double method as being safer, but the outlook for the single, larger dose is growing brighter with every day that passes. It should certainly, they say, be given the preference when there is no time to give the usual two doses, and also in times when these diseases are epidemic. As vaccination is not compulsory for the civilian population, this single inoculation is often preferable for them as they do not take readily to this precautionary measure and often absolutely refuse a second inoculation.

60. **Malaria in French Troops.**—Ravaut and his co-workers at Marseilles comment on the peculiar persistency of malaria in the troops returning from Macedonia. They reiterate that the malarial parasite is the same old plasmodium and that quinin will kill it. The reasons for its inefficiency in these cases is because the men merely pretend to take the quinin given them. The hospital personnel are deceived and not until the urine was examined and no trace of quinin found in it, was the mystery of the peculiar tenacity of Macedonian malaria solved. They found one soldier who had an accumulation of 304 quinin tablets in his kit, and piles of quinin powders have been found in the mattresses in different hospitals. They describe the various tricks employed to avoid taking the quinin while deceiving the nurse to the effect that the drug is being taken regularly. Treatment of malaria thus assumes a psychologic aspect. A few drops of Tanret's reagent added to 2 c.c. of urine, voided in the presence of the physician, will turn the urine turbid and opalescent if it contains quinin. The reaction is stronger in proportion to the quinin content. The precipitate dissolves in alcohol and with heat, and reappears on cooling, while the albuminoid substances present are not modified and form a lumpy precipitate. This reaction persists positive for twenty-four hours with a dose of 0.5 gm. quinin, and for thirty-six and sometimes forty-eight hours with a dose over 1 gm.

The method of treatment best adapted to obviate deception was found to be the giving of the quinin in water at the two principal meals of the day, using a solution of 33 gm. quinin to the liter. The dose of 30 gm. of the solution corresponds to 1 gm. of the drug. Being taken with a meal and followed with an alkaline or acid drink, the drug is almost always borne without signs of intolerance. Ravaut makes a practice of alternating two days of the quinin with two days of arsenic treatment, and gives epinephrin in addition when there are signs of suprarenal insufficiency. [Tanret's reagent is a mixture of mercuric chlorid, 1.35 gm.; potassium iodid, 3.32 gm.; acetic acid, 20 c.c. and distilled water to make 60 c.c.. It gives a white precipitate with albumin in urine.]

61. **The Blood Pressure Reveals Aortic Insufficiency.**—Amblard analyzes the various factors which influence the blood pressure with aortic insufficiency, and declares that with a minimal pressure of 65 mm. mercury and maximal of 165 mm. we can be certain there is aortic insufficiency even when the lesion is not evident to the ear, and the pulse rate is normal. He estimates the normal range in health as from 80 to 140 mm. With aortitis and with kidney trouble the minimal pressure drops in the same way as with simple aortic insufficiency but it is only a relative drop, the differential pressure keeping about the same in all phases of aortic incompetency. This allows oversight of conditions as the case progresses, and, in connection with the pulse, estimation of the functional capacity of the heart.

62. **Experimental Shell Shock.**—Mairet and Durante reproduced with rabbits the violent shock from explosion of a large shell in the close vicinity without direct contact with particles of the shell. Five of the twelve animals died in the course of five minutes, one hour, or one to thirteen days. The others after a brief stunned condition, with acceleration of the respiration and transient agitation, rapidly recovered and were slaughtered later. Minute hemorrhages were found numerous in the lungs, spinal cord and nerve roots, and a number of small vessels in the gray substance of the cortex had ruptured into the sheaths of lymphatics. The smallness of these hemorrhages and the fact that they did not diffuse testify that they occurred instantaneously in consequence of the depression which followed the compression. These histologic hemorrhages entail anemia of the small territories beyond them, which explains the areas of softening to which Jumentié and Claude have called attention. These very numerous but very restricted lesions correspond to the symptomatology of men suffering from shell shock, especially the amnesia which may result from the anemia in certain small areas, the neuralgias, and the pains at the emerging points of the nerves. The latter correspond to the intraradicular hemorrhages found in the rabbits. This may also be the explanation of certain cases that have been published in which the clinical picture of tabes came on suddenly after shell shock, with negative Wassermann reaction and a rapid course. It may also explain the galloping course of general paralysis after concussion from an exploding large shell.

Progrès Médical, Paris

August 25, XXXII, No. 34, pp. 279-286

63 Electrically Induced Vertigo with Disease of the Internal Ear. (Epreuve de Babinski.) H. Bourgeois.—p. 279.
64 Orthopedic Apparatus for Paralysis or Mutilation of the Hand. J. Regnault.—p. 280.
65 Present Status of Our Knowledge of Spirochetes. A. Bernard. —p. 283.

Correspondenz-Blatt für Schweizer Aerzte, Basel

September 1, XLVII, No. 35, pp. 1121-1152

66 Frequency of Miliary Tuberculosis in the Elderly. E. Braun. —p. 1121.
67 *Tuning-Fork Test for Disease of the Nasal Sinuses. E. Oppikofer.—p. 1130.
68 *Frothy Secretion in the Pyriform Sinus as Sign of Diverticulum in the Esophagus. E. Oppikofer.—p. 1133.

67. **Tuning-Fork Test for Disease of Nasal Sinus.**—Oppikofer states that he was unable to confirm Glas' statements in regard to the diagnostic importance of the Weber tuning-fork test applied in the diagnosis of disease in the nasal sinuses. He applied the test to sixty-nine adults with certain sinusitis, and obtained a positive response only in four, that is, in 5.8 per cent., and the response was not decided in these.

68. **Frothy Sputum in Pyriform Sinus as Sign of Esophagus Diverticulum.**—Oppikofer refers to Wagener's assertion in 1911 that the finding of frothy mucus in the fossa on the side of the larynx, external to the aryepiglottis fold, is presumptive evidence of a diverticulum in the esophagus, just below the pharynx. Von Eicken confirmed his statements in five cases, and Oppikofer reports the same finding in six cases of unmistakable hypopharynx diverticulum. The accumulation of frothy sputum at this point is therefore a simple and reliable sign which can scarcely fail to be present with a diverticulum in this region. At the same time, he warns, the frothy sputum in the hypopharynx may be encountered with any acute or chronic inflammatory affection of the esophagus, although it is not constantly found; also with laryngeal tuberculosis, cancer in the sinus, etc. He has further found the frothy sputum in the pyriform sinus in nineteen out of 200 healthy persons examined, that is, in nearly 10 per cent., but in these cases the sinus was not completely filled, and the frothy sputum was not found constantly in the same individual. It is therefore evident that pronounced frothiness in the hypopharynx is strongly suspicious of a diverticulum in the esophagus but it does not occur exclusively with this.

Gazzetta degli Ospedali e delle Cliniche, Milan

August 16, XXXVIII, No. 65, pp. 897-904

69 Official List of Physical Causes for Exemption from Military Service. Giardino. Titlepage.
70 Freezing Injuries and their Treatment with Thermal Mineral Water. S. Salvatore.—p. 897.

August 19, No. 66, pp. 905-919

71 *Treatment of Epidemic Meningitis. A. Indelli.—p. 907.
72 Hernia and Military Service. E. Villa.—p. 918.

71. **Epidemic Meningitis.**—Indelli comments on the disturbances liable to follow excessive dosage in serotherapy of cerebrospinal meningitis. He reports the details of three typical cases to illustrate the advantages of giving small fractioned daily doses of the antiserum, testing the patient's tolerance for it, and supplementing this direct local treatment by giving the antiserum intravenously or subcutaneously. This mixed treatment seems more logical and has proved more successful in his experience. The patients whose cases are described were a child of 7 and two girls of 17 and 19. Two left the hospital quite cured; the third is still being treated for a residual paresis of one leg. In this case the intraspinal serotherapy had been supplemented by intraspinal injection of a silver salt. This was followed by extreme general prostration, rise of temperature and purpura, evidently from the toxic action of the silver salt. The patient was left in peace for a few days after this except for stimulants to the heart and morphin to relieve pains in the legs and headache. Then the symptoms seemed to be growing worse, but no fluid could be obtained with lumbar puncture. Intramuscular injection of the silver salt was followed by some improvement. The disease thus progressed in waves, gradually growing less pronounced, and the fortieth day the condition was no longer regarded as grave, and the patient is now well on the way to health. It seems evident that the intraspinal silver salt was a factor in the transformation of this "open" into a "closed" form of meningitis.

Policlinico, Rome

September 2, XXIV, No. 36, pp. 1089-1120

73 *Tuberculosis from the Standpoint of Military Medicine. E. Maragliano.—p. 1089.
74 *Syphilitic Arthritis, Gastritis and Febrile Splenomegaly. C. Verdozzi.—p. 1095. Conclusion.
75 Iodized Benzene in Surgical Work. G. Zanetti.—p. 1099.

September, Medical Section No. 9, pp. 349-388

76 *The So-Called Nervous Reflex Phenomena in War Neurology. I. Valobra.—p. 349.
77 *Biologic and Curative Action of White and Colored Light. E. Milani and L. Cappelli.—p. 370.
78 Hyperindicanemia. A Fara.—p. 385. To be continued.

August, Surgical Section No. 8, pp. 313-352

79 *Technic for Amputations for Traumatic Lesions. G. Lerda.—p. 313. Continuation.
80 *Suture of Tendon Stumps over a Gap by Mobilizing their Attachment to the Bone. R. Mosti.—p. 332.
81 *Bone Production in the Kidney. (Ossificazione intrarenale.) E. Pirondini.—p. 339.
82 *Chronic Abscesses. (Neoformazioni flogistiche a decorso lentissimo.) G. Filardi.—p. 345.

73. **Tuberculosis from the Military Standpoint.**—Maragliano remarks that there seems to be a good deal of uncertainty among the army medical officers as to tuberculosis in relation to the military service. He declares that the only question should be, Has the man any kind of a tuberculous affection? If the answer is affirmative, then there is only one thing to do, the man should be eliminated from the army. Even when the man is well nourished, he is liable to have his precarious balance upset at any moment. Hence he cannot be utilized in any way in military service which is liable to be or become eventually harmful for him. No gradations are possible, he insists. No physician can authorize the retention of a tuberculous man; no one can guarantee that he has sufficient resisting powers to bear the depressing influence of military life either in the active zone or back of the firing line. The state and military authorities demand that no person with tuberculosis detectable by the diagnostic measures at our command shall be admitted to the military service. A circular issued by the minister of war, April 15, 1917, deplores the fact that men have been passed for the service with tuberculous lesions so serious and advanced that ordinary clinical examination should have revealed them. Certain physicians in examining the recruits are misled by their zeal to swell the army ranks, and they pass candidates who, they think, are capable of rendering good service even although they know that the men are tuberculous. But the nation and the government do not want this at all. Physicians should follow the lines laid down for those who are responsible for the make-up of the army. They should not restrict their search for tuberculosis to pulmonary lesions alone, as is too often done, but should seek for tuberculous affections of all kinds, however slight they may appear. This is a service which physicians can render now to the army. The benefit from it will be felt in the near future by the whole country. [Maragliano speaks with authority as he is not only one of the leading experts on tuberculosis but is also a senator of the realm, in close touch with the government.] He emphasizes that any focus of tubercle bacilli may and does remain circumscribed and occult as long as the resisting forces of the organism are able to oppose to them an adequate defense. But once the resisting powers are weakened by any cause, the bacilli throw down the barriers, and sally forth to conquer. Among the instructive diagnostic findings in case of a pulmonary lesion, he cites elastic fibers in the sputum and detection of antibodies in the blood and of tubercle bacilli in the urine. Latent tuberculosis of the kidneys is much more common than is generally believed. In dubious cases, roentgen examination is imperative, and subcutaneous injection of tuberculin, not less than 2 or 3 mg. if there are no broncho-alveolar foci. With an existing focus, 1 mg. or less is enough. The focal reaction should never be overlooked;

this may be as marked after taking 1 gm. of potassium iodid at one dose as after the tuberculin test. It should never be forgotten that tuberculosis proceeds in stages, now advancing, now stopping, as the defences grow stronger. The "clinical cure" means merely that the defence is stronger than the invading host and is holding it in check. If physicians at large appreciated this, they could surround the tuberculous with precautionary measures so that many of them could live on indefinitely. They should never be exposed to the vicissitudes of army life.

74. **Unusual Manifestations of Syphilis.**—Among the cases described by Verdozzi is that of a woman of 41 with an indolent tumefaction of the right knee. The bones showed erosions and deformity on roentgenoscopy, and a bloody fluid escaped on puncturing. No benefit was derived from a plaster cast or from administration of neosalvarsan and mercury. In two other cases the clinical picture of a gastric ulcer or cancer was accompanied by a strongly positive Wassermann reaction, and, under neosalvarsan, recovery from the syphilitic gastritis was soon complete. The last case described was that of a woman of 52 with great enlargement of the spleen, chills and intermittent fever, headache and general malaise, all continuing more or less constantly for two years. Then the spleen was removed, but the fever persisted unmodified until conditions were restored to practically normal by a course of neosalvarsan.

76. **Reflex Nervous Disturbances after War Wounds.**—Valobra summarizes the opinions of the different writers on this subject of disturbances observed in a limb after a wound that did not injure directly any of the nerves or vessels. He has had a number of such cases in his care and was impressed by the element suggesting a psychoneurosis and also an element for which the hospital care was responsible, namely, overlong immobilization. This not only helped to fasten the psychoneurosis element but it induced local changes, fastening the tendency to voluntary immobilization in the form of spasmodic contracture or voluntary inactivity. The clinical picture, as he has seen it, conforms in every detail to Babinski and Froment's description of reflex nervous trouble, but he does not agree with them in their explanation of it as something independent of external circumstances. He has found that it can be cured by physical measures associated with psychotherapy. Proper surveillance of the immobilization in these cases of minor wounds, not allowing the limb to be immobilized too long, will ward off all such disturbances in the majority of cases.

77. **Associated Phototherapy and Radiotherapy.**—Milani and Capelli review the results obtained during the last four years at the institute for electrotherapy and radiology connected with the University of Rome. They also describe considerable research on the biologic, bactericidal and curative action of white and different colored lights. In lupus, by far the best results were obtained with white light (including the greater part of the ultraviolet rays and all the light part of the spectrum), especially when supplemented by radium and the roentgen rays. For torpid war wounds, red light stimulated the granulations, while exuberant granulations seemed to be favorably modified with blue light.

79. **Technic for Amputation.**—This instalment of Lerda's long article has twenty-one illustrations showing the different technics required for different kinds of wounds of the limbs.

80. **Suture of Tendons and Ligaments Over a Gap.**—Mosti analyzes the various methods in vogue for bridging a gap between tendon and ligament stumps. In a case of which an illustrated description is given, there was an unbridgeable space between the stumps of the patellar ligament. The upper stump was mobilized by slitting the patella lengthwise and slipping the anterior half downward until it could be sutured to the lower stump. This technic proved completely successful. The halves of the patella were fastened together with a screw.

81. **Ossification in the Kidney.**—Pirondini does not know of any case on record similar to the one he describes in which a woman of 37 had been having occasional hematuria and pains in the right kidney region for a year and later in the left kidney, with pyuria. Roentgenoscopy confirmed the assumption of bilateral kidney disease, but the intensity of the pains on the left side compelled nephrotomy and a large calculus was extracted. The patient collapsed a few hours afterward and necropsy revealed in the right kidney a triangular bone, measuring 3 by 5 mm., protruding into a cavity filled with pus. The bone was complete, that is, it had periosteum and bone marrow, but no features of a tumor. It was evidently of embryonal origin or the result of the irritation from the inflammation.

82. **Chronic Abscesses.**—Filardi describes two cases of inflammatory new growths of extremely slow development which had led to the mistaken diagnosis of cancer. The tumors were mostly hard, with purulent fusion only at one small part. The tumor was in the abdomen in both cases; the patients were men of 26 and 72. The tumors had attracted attention for four years and three months, respectively, and both were permanently cured by clearing out the focus. There was a history of operative treatment for inguinal hernia not long before in each case, but in the younger man unsuspected appendicitis was probably the main factor. In both cases only the ordinary pyogenic germs were found, and they were of slight virulence.

Revista Critica di Clinica Medica, Florence

September 1, XVIII, No. 35, pp. 341-348

83 The Psychology and Responsibility of the Tuberculous. M. Maurizi.—p. 341. Commenced in No. 34, p. 333.

Prensa Medica Argentina, Buenos Aires

August 20, IV, No. 8, pp. 89-104

84 *Normal Beef Serum in Treatment of Anthrax. III. J. Penna, J. B. Cuenca and R. Kraus.—p. 91.
85 *Syphilitic Articular Rheumatism. P. M. Barlaro.—p. 93.
86 *Acute Anterior Poliomyelitis (Enfermedad de Heine Medin.) G. A. Alfaro.—p. 98.

84. **Treatment of Anthrax with Normal Beef Serum.**—Penna, Cruenca and Kraus give illustrated descriptions of several cases out of their extensive experience with normal beef serum in treatment of human anthrax. [It was recently commented on editorially in The Journal, Sept. 29, 1917, p. 1085.] They now have a record of 140 patients thus treated, with the loss of only one, that is, a mortality of 0.71 per cent. Their latest series of ninety cases, justifies, they say, the exclusion of all doubt as to the efficacy of this treatment. At first they gave the injection intravenously, but found that the subcutaneous route is equally effectual except for the gravest cases. The dose ranged from 10 to 30 c.c. as the average, up to 40 and 50 in the most intense cases. The dose is repeated on the next and the following day at need. The serum is heated twice, and nothing has been observed to indicate production of serum sickness or allergy in any form such as is comparatively common with horse serum. In the nine severe cases described in detail, the desired result was attained with a single injection of from 20 to 30 c.c., with the exception of one case in which the anthrax pustule was on the neck. The first dose here was 50 c.c., and 30 c.c. was given later the same day on account of the alarming general symptoms.

85. **Syphilitic Articular Rheumatism.**—Barlaro says that in his experience he has found articular rheumatism of syphilitic origin more prevalent than that from tuberculosis and gonorrhea combined, and much more frequent than true acute febrile polyarticular rheumatism. In some cases there is merely pain in the joints and functional weakness, the pains growing worse at night. As a rule the arthralgia comes on without preceding trouble, but sometimes there is a history of an acute infectious sore throat not long before. The temperature fluctuates irregularly and one or more joints may swell. In two cases described the pains developed acutely in throat, abdomen and knees in one, and in the right knee and left hand in the other, involving later the other knee and the ankles. The pain in this case was increased by movement of the joint, but there was no swelling or redness of any joint. In both cases mercurial treatment proved successful in gradually abolishing all disturbances and the general health improved. In another group of cases, of which the tempera-

ture charts are given, the joint trouble resembled deceptively ordinary febrile acute articular rheumatism. In these cases mercurial treatment only slowly conquered the joint trouble and fever, fully two months passing before the temperature was normal. In other cases the trouble was subacute and restricted to one or two joints, with brief acute exacerbations. He has also encountered chronic cases, and remarks that these are the cases of rheumatism which used to be cured empirically by mercury. Modern science has demonstrated that many forms of chronic rheumatism, from the monoarticular to deforming arthritis and rhizomelic spondylitis may yield to thorough treatment as for syphilis. In one such case the woman had a history of syphilis contracted a year or two before. The "rheumatism" developed with chills, fever and swelling and redness of the joints, especially the small joints of the hands. Under mercurial treatment the fever was aggravated at first but then declined. The clinical picture of chronic deforming rheumatism then developed with deformity of the fingers and contracture, rheumatism of the neurotrophic type, and she grew weaker and weaker. By the end of the month the dose of mercury was doubled, after which the gravest symptoms gradually subsided. The first and gravest phase lasted for seven months, comprising two severe and two minor attacks. Then under continuous mercurial treatment the woman recuperated and is now free from pain and in good condition except for the deformed fingers and feet. He cites some other cases of this tenacious form with its waves of acute exacerbation. A special feature of nearly all the cases was the greater intensity of the pains at night. There is a possibility that the peculiar tenacity of some of these cases is due to the fact that it is ordinary rheumatism occurring in a syphilitic.

86. **Poliomyelitis.**—Alfaro relates that up to 1909 acute anterior poliomyelitis at Buenos Aires had occurred only sporadically, but in that year and since the cases have been more frequent, without ever assuming actual epidemic form or special gravity. In Montevideo and vicinity last year there were about sixty cases but all were mild. He has himself encountered at Buenos Aires sixty cases during these recent years but has never seen or known directly of a case of contagion, nor been able to trace the cases through a carrier to the source. Hence he does not approve of the excessively severe prophylactic measures which some have wished to introduce in Argentina. In one instance the three children of a family developed the disease all together, with only a few hours' interval, the clinical picture suggesting influenza. One child had merely fever, prostration and mild catarrhal symptoms, soon subsiding, but in the others intense meningeal symptoms followed, to which one child of 2 rapidly succumbed while the other, a boy of 6, lay comatose for several days and then the paralyses permitted a retrospective diagnosis of the familial epidemic. The lumbar puncture fluid in both cases showed merely slight albumin content and lymphocytosis, with no bacteria. In one other case this meningeal form proved fatal from ascending paralysis. In all his other cases the patients recovered. The differential diagnosis was by exclusion and the leukopeny. The paralysis during the disease affected the legs in 75 per cent. but in some cases the muscles of the neck and trunk were involved and in one case there was eventration from the paralytic atrophy of the rectus muscle. In another there was acute incoordination of the movements of the trunk and limbs for a time. He noted the painful type in several cases, and Morquio of Montevideo reports that this type formed 70 per cent. of his cases; Marie denies the existence of this type. In one of Alfaro's cases the pain was so intense in one thigh and the contracture so severe that acute coxalgia was suspected at first, until the consecutive paralysis, pronounced atrophy and loss of the reflexes indicated its true nature. The incomplete and abortive cases must be watched for with care as they spread the disease. He had only two deaths in his sixty cases but almost all the patients, with one exception, were left with persisting paralysis. In four cases he gave intraspinal injections of serum from convalescents; the results seemed brilliant in one case but were disappointing in the others.

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July 21, II, No. 3, pp. 205-268

87 Modern Spiritualism. (Het hedendaagsch spiritisme.) G. van Rijnberk.—p. 205.
88 *Diathermy in Treatment of Gonorrheal Ophthalmia. J. E. L. Kraft and G. ten Doesschate.—p. 214.
89 *Pathogenesis of Tetany. G. C. Bolten.—p. 218.
90 Cooperation Between Physician and Dentist. C. van der Hoeven. p. 236.
91 Meningococcus Meningitis in a Child. W. A. Weisfelt.—p. 240.

88. **Diathermy for Gonorrheal Ophthalmia.**—Kraft and ten Doesschate relate that excellent results have been reported in various quarters from the use of diathermy, electric thermopenetration, in treatment of various eye affections, including traumatic iridocyclitis, rheumatic scleritis, chronic uveitis, trachoma, vernal conjunctivitis and above all in parenchymatous keratitis. They have tried it themselves in chronic iridocyclitis, tuberculous keratitis and gonococcus eye affections. No benefit was apparent in the two first named, but in the gonorrheal ophthalmia the results were gratifying. The action of the diathermy seems to be exclusively that of heat. The heat being generated within the tissues reaches a higher degree than is possible to attain with compresses, cataplasms, etc., the benefit from which has long been an established fact. With high temperatures we attack the gonococcus on its weakest side, as it is well known that it is killed off by comparatively low temperatures. Bumm found that at 38 C., long kept up, the gonococci lost the power of reproduction. Cases are on record in which gonorrheal ophthalmia was promptly cured by application of steam. Experiments on rabbits have apparently shown that their eyes can stand the application of direct heat to 45 C. without harm.

With diathermy it is possible to reach a temperature of 42.5 C. in the conjunctiva, as can be measured by a mercury thermometer made to fit into the culdesac, the scale projecting between the lids. The temperature can also be determined from a needle introduced into the conjunctival fold, but these measures are liable to do harm. The patient's sensation as to the heat is enough of a guide. The electrode was made to fit over the eyeball; the other electrode was placed at the back of the neck. The fat and bone around the eyeball are bad conductors, so that the heat generated is retained in the eyeball, and it is retained most in the tissues which offer the most resistance to the electric current, namely, the cornea and sclerotic. The success in the first case in which they tried the diathermy was so striking that they looked eagerly for another case of gonorrheal ophthalmia, but two years passed before they encountered one among the usual run of gonococcus urethritis cases. Two hours after the first application of the diathermy for fifteen minutes, no further gonococci could be found in the secretions in the eye recently involved in the ophthalmia. Some were still found in the older process in the other eye, but they gradually disappeared and vanished completely by the tenth day. The third and last case in their experience was less satisfactory; there was already an ulcer on the cornea when first seen, and the skin of the eyelids was macerated by preceding local application of potassium permanganate and silver salt solutions. It had been rendered so sensitive that effectual diathermy could not be systematically applied, but even under its partial use the gonococci finally vanished.

89. **Pathogenesis of Tetany.**—Bolten describes the case of a young man with tetany, and then devotes the rest of his long article to discussion of the pathogenesis of tetany, as he does not believe that the parathyroids are directly responsible for more than a certain proportion of the cases. He further disagrees with those who take tetany in children lightly; he cites figures showing that complete recovery followed in only about 20 per cent. He ascribes tetany to a "spinal intoxication." When this is the work of toxic action from the parathyroids, the outlook may be grave. The tetany following removal of the parathyroids, he reiterates, is seldom or never overcome, but when the parathyroid insufficiency is only partial or transient, then the tetany may subside. In the nonparathyroid cases the toxic action on the spinal cord is usually transient, and the resulting tetany is benign, as in workman's tetany, tetany with various infectious diseases,

and with stomach or bowel trouble. The fact that workman's tetany is liable to recurrence is due to the action of the cause inducing it in the first place, especially the eating of bread made from grain containing ergot. He does not believe that there is any specific tetany poison; any poison casually acting on the spinal cord is liable to bring on tetany. In the case described in detail, the young man seemed to have a chronic, latent tetany which flared up under autointoxication from constipation, and subsided again as the bowel functioning became regular again. There was a tendency to cataract in one eye from childhood and to infantilism and defects in the enamel of the teeth—all of which Bolten regards as manifestations of the tetany of parathyroid toxin origin. They have never been observed with tetany following complete removal of the parathyroids. He explains the case, therefore, as an old chronic parathyroid tetany which keeps constantly latent until fanned into a flame by some occasional other factor, and which subsides into latency again as this factor is eliminated. He quotes from most of the recent literature on tetany but gives no bibliographic references.

Hospitalstidende, Copenhagen

August 1, LX, No. 31, pp 741-764

92 *Thyroidism after Roentgen Treatment; Two Cases. P. Verning. —p. 741.

92. **Death After Roentgen Treatment of Exophthalmic Goiter.**—Verning reports two cases, with only a few weeks' interval, in which the vascular, recently developed goiter was given Roentgen treatment, and fatal thyroidism followed. One patient was a woman of 26; the symptoms of the exophthalmic goiter became manifest two months after delivery of her first child. She had always been nervous, and two years before had had febrile articular rheumatism, with complications on the part of the heart. The thyroid was exposed to the roentgen ray, the dose 5 H, filtered, and the exposure was repeated the next day. The circumference of the neck subsided from 36½ to 34½ in a few days, but the tremor and agitation increased to actual delirium, and the woman died fifteen days after the last exposure, a little over two months after the first signs of the exophthalmic goiter. The other patient was a housemaid of 18 with no pathologic antecedents except one slight attack of gastric catarrh and chlorosis. For the last year she had been easily tired and nervous, with a tendency to occasional palpitations and shortness of breath. She entered the hospital a month after she noticed that her neck had begun to enlarge a little. Two roentgen exposures were given with the same dose as in the other case, only with a two-day interval. Symptoms of mild thyroidism developed as the circumference of the neck became reduced from 34 to 30.5. Later the thyroid symptoms became aggravated, and the girl died about six weeks after the exposures. A mild intercurrent infectious sore throat may have been a factor in the fatal outcome. The dosage of the rays was not above the average, but must have been excessive for such recently developed cases. Verning summarizes in conclusion the cases he has found on record in which, under roentgen treatment, the symptoms became aggravated. As a rule, however, this aggravation was transient, and the result on the whole was improvement.

Hygiea, Stockholm

July 31, LXXIX, No. 14, pp. 689-736

93 *Prolapse of the Umbilical Cord. A. Nordlund.—p. 689.
94 *Circumscribed Phlegmonous Gastritis Simulating a Tumor. Sten von Stapelmohr.—p. 708.

93. **Prolapse of the Umbilical Cord.**—Nordlund's statistics emphasize the danger from attempts to reduce the prolapsed cord. The mortality in the reduction cases was 30.2 per cent., but in reality it was still higher, as reduction had been attempted first in some of the version cases. So the version alone was not responsible for all of the mortality of 27.4 per cent. in the version with extraction cases. The total number of cases of prolapse of the umbilical cord was 5.3 per cent. of the 62,316 deliveries at the Stockholm maternity since 1850. In these prolapse cases, 38 per cent. of the infants were much below and 32 per cent. much above the average weight. The mortality in the total 333 cases was about 30.9 per cent. He gives tables of the different data as compared with those from other maternities. In not less than 52 of the 333 cases, the prolapse followed some operative intervention, and in 9 it was increased by the intervention. Attempts to reduce the prolapsed cord were made in 104 cases, but failed in 67, and 32 of the children in the latter group died. His conclusion is that in case of prolapse of the umbilical cord, extraction should follow at once, with or without version. The risk from attempted reposition of the cord is shown plainly by the data presented. While waiting for the os to dilate, the woman should be kept in the Trendelenburg position.

94. **Circumscribed Phlegmonous Gastritis.**—Stapelmohr published last year three cases of diffuse phlegmonous gastritis, and he now reports two cases in which the trouble was limited to the pylorus region. This area was resected, but instead of the supposed cancer the microscope showed merely phlegmonous gastritis. One patient was a man of 59, and the trouble began with fever and vomiting, the laparotomy following in less than three weeks. The other patient was a woman of 33, and there had been symptoms from the stomach for three years. The Wassermann test gave a positive response. Both patients were apparently cured by the operation. There were evidences of a chronic hyperplastic gastritis in the second case and in both cases there was pronounced leukocytosis. This latter might aid in differentiation.

Ugeskrift for Læger, Copenhagen

July 26, LXXIX, No. 30, pp. 1233-1286

95 *Diagnosis of Pregnancy. J. Kaarsberg.—p. 1233.
96 *The Coarse Bread Question. M. Hindhede.—p. 1248.

95. **Diagnosis of Pregnancy.**—Kaarsberg declares that he has been unable to find on record a single authentic case of actual menstruation during a pregnancy, not even in cases of double uterus. The changes in consistency in certain areas are instructive signs of pregnancy, even in the early stages. He has sought regularly for Lobhardt's "livid stripe," running from the mouth of the urethra past the relics of the hymen, but has found it in only three cases. The Abderhalden test seems to exclude pregnancy when the response is negative, but a positive reaction is not conclusive. Hegar's sign is the softer consistency of the uterus, so that it can be pressed in with the fingers above the cervix until the fingers almost meet. But Kaarsberg has never encountered this but once in his experience. A softer consistency of the uterus in the cornua is comparatively common, and very instructive, even early in the pregnancy. Veterinarians count on this in examining cows to learn if they are gravid. The cornu is easily palpated through the rectum. He regards this as more instructive than changes in the size and shape of the uterus in the first three months. In a case of pregnancy in the cornu with an eccentric growth, he operated for assumed tubal pregnancy but found the three months' ovum normally embedded. Such a mistake can be avoided by finding on palpation both cornua equally well defined. Interstitial pregnancy is often accompanied with attacks of severe pain.

In discussing the complications of pregnancy, he remarks that he has never seen but one instance of incarceration of the gravid, retroflexed uterus. The fear of incarceration therefore need not be great; the patient can be warned to apply for help if there is difficulty in voiding urine. Restoration of the uterus to place is liable to entail abortion. There can be no incarceration of the fully retroflexed gravid uterus without the cervix being drawn up and back of the symphysis. This usually squeezes the lower walls of the bladder together and impedes its emptying, but this is not always the case. Conditions are often misleading with a double uterus, the palpation findings suggesting a tumor or extra-uterine pregnancy. In conclusion he presents evidence that the condition called "supravaginal hypertrophy of the cervix" of the gravid uterus is in reality torsion of the uterus with an ovum embedded in a cornu.

96. **White or Whole Grain Bread.**—Hindhede replies to recent criticism of his research on foods and dietaries. It has been objected that the two men, the subjects of his experiments, had such unusually good digestion that conclusions from them, particularly in respect to digestion of bran, cannot apply to average persons.